

# AUTHOR INDEX

## A

Abbate, S., 219  
 Abdallah, J., 326  
 Abdul-Gader, M., 152, 154  
 Abouaf-Marguin, L., 498, 499, 512  
 Abraham, F. F., 537  
 Abrahams, E., 146, 147, 149  
 Abul-Haj, N. A., 577  
 Acacona, J. R., 56  
 Ackerman, J. L., 452  
 Adachi, H., 413, 430  
 Adachi, Y., 439  
 Adam, G., 399  
 Adams, D. J., 328  
 Adams, E. M., 328  
 Adams, M. C., 584  
 Adelman, S. A., 574, 576, 577, 581  
 Adrian, M., 249, 263, 269  
 Aebi, U., 260, 262, 266, 267  
 Aharonov, Y., 284  
 Ahlhas, T., 182, 184, 193, 194, 196, 205  
 Ahlrichs, R., 323, 325, 333  
 Akey, C. W., 249, 261, 264, 267, 269  
 Alagona, G., 439, 440  
 Alberly, J., 588  
 Albrecht, A. C., 277, 291, 292, 300-3  
 Albrecht, M. G., 563  
 Alder, B. J., 321, 325, 525  
 Alexandrov, I. V., 589, 592  
 Ali, D. P., 309, 577, 591  
 Aliev, M. R., 277  
 Allen, M. P., 591  
 Allen, S. D., 214  
 Allison, S. A., 575  
 Alper, J. S., 231, 235, 237  
 Altman, R. S., 58, 60, 61  
 Altona, C., 129, 237  
 Altschuler, B. L., 143, 144  
 Altschuler, B. N., 38, 40  
 Amano, T., 56-59, 61-63  
 Amar, F. G., 575  
 Ammeter, J., 288  
 Amos, L. A., 245, 256, 261, 262, 267  
 Amundson, N. R., 347  
 Anaconda, J. R., 56  
 Andersen, H. C., 185, 321, 326-29, 331, 439, 447, 526, 530, 535, 536  
 Anderson, J. B., 574

Anderson, J. G., 59  
 Anderson, P. W., 141, 145-47, 149  
 Anderson, W. A., 451  
 Ando, T., 393  
 Andrea, T., 327, 328  
 Andres, K., 142-44, 147, 149, 155  
 Andries, C., 401  
 Andronov, A. A., 84, 100  
 Angell, C. A., 340, 447, 526, 527  
 Aniansson, G. E. A., 181  
 Annamalai, A., 215, 228-31, 234  
 Appel, J., 182, 184  
 Appenroth, K., 589  
 Applequist, D. E., 582  
 Appleton, J. P., 42  
 Aquada, V., 588  
 Aragon, S. R., 395  
 Arakawa, K., 326, 332  
 Arakawa, T., 400  
 Aranow, R. H., 184  
 Arefeva, E. F., 36, 38, 41  
 Argon, A. S., 537  
 Aris, R., 347  
 Armstrong, C. M., 177  
 Armstrong, J. A., 302  
 Arndt, K., 129  
 Aronov, A. G., 143, 144  
 Aronsson, R., 543  
 Arseniev, A. S., 113, 119  
 Asai, H., 393  
 Asbrink, L., 292  
 Ash, J. F., 398  
 Ashcroft, J., 588  
 Ashurst, W. T., 326, 328  
 Aspiala, A., 495, 498-503, 505, 521  
 Aue, W. P., 106-8, 452, 457  
 Auerbach, D. J., 537  
 Austin, R. H., 395  
 Avent, A. G., 476  
 Avery, J., 316  
 Avivi, A., 399  
 Avouris, Ph., 556, 569  
 Axelrod, D., 380, 381, 383, 391, 394, 395, 398, 399  
 Azumi, T., 280

## B

Baba, N., 263, 268  
 Babamov, V. K., 590, 591

Babcock, G. T., 568  
 Bachelart, S., 372, 374  
 Bachelet, G. B., 422  
 Bachmann, P., 107, 108, 453, 467  
 Back, M. H., 39  
 Backx, C., 562  
 Backx, P., 444  
 Bado, P., 576-78  
 Baer, M., 277, 279  
 Baerends, E. J., 412, 413, 424, 425, 429, 430  
 Bagchi, B., 584, 586, 589, 590  
 Bagus, P. S., 410, 421  
 Bahr, G. F., 252  
 Bahr, W., 380  
 Baig, M. A., 302  
 Bain, A. D., 462, 464  
 Bair, C. H., 56  
 Baker, T. S., 260, 263, 266, 268  
 Balakotiah, V., 81  
 Balakrishnan, K., 394, 399  
 Balasubramanian, D., 181  
 Balasubramanian, K., 408, 418, 419, 421, 427-29  
 Baldeschwieler, J. D., 492  
 Balducci, G., 427  
 Baldwin, J., 302, 269  
 Balk, M. W., 576, 577  
 Ballhausen, C. J., 316  
 Band, Y. B., 293  
 Banhegyi, G., 228, 237  
 Baram, A., 182  
 Baras, F., 78  
 Barbara, P. F., 578  
 Barber, P. W., 567  
 Barboy, B., 185  
 Bar-Eli, K., 354, 355, 360, 365  
 Barisab, B. G., 399, 400  
 Barker, J. A., 185, 526, 528  
 Barnes, A. J., 500, 502  
 Barnes, C. E., 56, 57  
 Barnes, P., 324  
 Barnett, C. J., 221, 234  
 Barnett, R. N., 537  
 Barron, L. D., 214, 219, 221  
 Barthelat, J. C., 429  
 Bartholdi, E., 106, 107, 452, 457  
 Bartlett, R., 216  
 Bartlett, R. J., 413  
 Basch, H., 429  
 Basus, V. J., 110  
 Battino, R., 427  
 Baudor, J. L., 528

- Bauer, S. H., 58, 66, 68, 586  
 Baughcum, S. L., 58, 68, 69  
 Baum, J., 470  
 Baumann, R., 113  
 Baumeister, W., 261  
 Bax, A., 106, 107, 111, 453, 455, 462  
 Baybutt, P., 415-17, 419, 420  
 Bayreuther, K., 129  
 Bear, D. G., 399  
 Beckman, E., 272  
 Beech, T., 505  
 Becken, P., 577  
 Begemann, M. H., 56, 58, 60  
 Behrman, E. C., 592  
 Bell, R. P., 588, 590  
 Bellard, S., 122, 127  
 Belousov, B. P., 348, 357  
 Ben-Aim, R., 38  
 Benbasat, J. A., 387  
 Bendedouch, D., 181, 182, 184, 187, 193, 196, 197, 204  
 Benderskii, V. A., 591  
 Benedek, G. B., 182, 184, 197, 206, 208  
 Benettin, G., 374  
 Benna, B., 515  
 Ben-Naim, A., 433  
 Benner, S. A., 227  
 Bennett, C. H., 574  
 Bennett, V., 398  
 Benoit, H., 174  
 BEN-SHAUL, A., 179-211; 181, 182, 184, 185, 187-94, 196, 205, 206, 208  
 Ben-Shaw, A., 472  
 Benson, G. C., 184  
 Benson, S. W., 582  
 Bentwood, R. M., 500  
 Berendsen, H. J. C., 108, 182, 193, 194, 199, 326-28, 439, 447  
 Berendsen, R. G., 131  
 Berens, P. H., 576-78  
 Beretta, F., 46  
 Berg, H., 399  
 Berg, M., 577  
 Berger, J. E., 244, 472  
 Berggren, K. F., 144, 145  
 Bergsma, J. P., 576-78, 582  
 Berkowitz, J., 289  
 Berlاد, A. L., 90  
 Bernard, M., 588  
 Bernasconi, C. F., 347  
 Bernath, P. F., 56-58, 61  
 Bernd, M., 110  
 Berne, B. J., 325-28, 341, 380, 401, 442, 444-46, 535, 545, 574, 575, 578, 583, 585, 586, 592  
 Bernengo, J. C., 174, 175  
 Bernstein, R. B., 277  
 Berry, M. V., 283, 287, 316  
 Berry, R. S., 301  
 Berson, J. A., 589  
 Bersuker, I. B., 277, 278, 288, 289, 430  
 Bertran, J., 588, 589  
 Besson, J. M., 535  
 Beveridge, D. L., 324, 328, 333, 338, 341, 436, 439, 444  
 Beyreuther, K., 121  
 Bhatt, N. N., 141, 146, 151, 155  
 Bhatt, R., 129  
 Bhatt, R. N., 142, 144, 145, 147-50, 152, 155  
 Bigot, B., 341, 586, 588  
 Biller, M., 110-12, 117-19, 133  
 Billing, G. D., 306  
 Billmann, J., 568  
 Biloen, P., 562  
 Binnendijk, T. J. J., 131  
 Binning, R. C. Jr., 586, 588  
 Bird, R. B., 183, 184, 190  
 Bishop, D. J., 151, 154  
 Bishop, D. M., 279  
 Bittner, J. D., 47  
 Bivas, I., 182, 204  
 Bixon, M., 592  
 Bjorken, J. D., 316  
 Blake, G. A., 61  
 Blankart, R., 56  
 Blasie, J. K., 181, 182, 184  
 Bleackley, R. C., 127  
 Blocher, J. M., 35  
 Blom, C. E., 237  
 Bloomfield, V. A., 387  
 Blum, L., 322  
 Blumberg, R. L., 340  
 Blumenfeld, K. S., 131  
 Blundell, T. L., 255  
 Bobrowitz, F. W., 423  
 Boddington, T., 84  
 Boden, N., 472, 476  
 Bodenhausen, G., 106, 109, 110, 451, 456, 461, 464, 483-85  
 Bodot, H., 498, 499  
 Boelens, R., 118, 119, 121, 124, 127, 133  
 Boerrigter, P. M., 412, 413  
 Bogan, D. J., 97  
 Bogey, M., 62, 63  
 Bohigas, O., 287  
 Bohm, D., 284  
 Bohm, H. J., 323, 325, 333  
 Bohme, D. K., 587  
 Boissonade, J., 348, 354, 355  
 Boiteux, A., 348, 354, 356, 360  
 Bolton, M. A., 592  
 Bon, F., 260, 266  
 Bond, J. R., 90  
 Bondi, D. K., 590  
 Bondybey, V. E., 60, 277, 284, 289, 512, 515  
 Bonne, U., 47  
 Bonnett, J. D., 56, 57, 70  
 Booy, F. P., 270  
 Bopp, P., 333, 340  
 Borden, W., 278, 282  
 Borejdo, J., 395, 401  
 Boring, M., 412  
 Borkovec, M., 585  
 Born, M., 277, 281, 285  
 Borochov, N., 173  
 Borodina, L. M., 40, 41  
 Bosch, C., 132, 133  
 Bothner-By, A. A., 477  
 Bothorel, P., 179-82, 202  
 Bottcher, C. J. F.  
 Boublik, M., 263, 268  
 Boudart, M., 35  
 Bouds, D. G., 323, 325, 333, 336, 538, 541, 542, 545  
 Bradley, J. A., 565  
 Brainard, J. R., 472  
 Branton, G. R., 586  
 Brault, J. W., 58  
 Brauman, J. I., 304, 587  
 Braun, M., 118, 133  
 Braun, V. R., 55  
 Braun, W., 110-13, 117, 118, 132, 133  
 Braunschweiler, L., 464  
 Braunstein, A., 214  
 Breslauer, K. J., 129, 131  
 Bretscher, M. S., 398  
 Brewer, L., 413  
 Brickmann, J., 591  
 Briggs, A., 153  
 Brisson, A., 260, 261, 263, 266, 268  
 Brockaert, P., 484  
 Brody, T. A., 287  
 Broka, C., 129  
 Brooks, C. L., 574, 581  
 Brooks, C. L., III, 576, 577  
 Brode, S. V., 57  
 Brown, C., 57  
 Brown, J. K., 559, 560, 577  
 Brown, J. M., 56, 57  
 Brown, L. R., 132, 133  
 Brown, P. K., 395  
 Brown, R. C., 305  
 Brown, S. C., 132  
 Brownstein, S., 462, 464  
 Brun, B., 181  
 Brun, T. S., 181  
 Brunden, M. J., 129  
 Brune, W. H., 59  
 Brunger, A., 391  
 Brunner, P., 452  
 Brus, L. E., 512, 578  
 Bruskin, E. J., 592  
 Buch, V., 287  
 Buchanan, J. W., 58, 65

- Buchholtz, F., 347, 350, 353,  
 354, 356, 362, 363, 365-  
 67, 370  
 Buchsbaum, S., 537, 538  
 Buckingham, A. D., 221  
 Budnikov, S. S., 430  
 Buevoz, J. L., 542  
 Buff, F. P., 577  
 Buhle, E. L., 260, 266  
 Buldt, G., 181, 182, 184  
 Bunker, D. L., 576  
 Bunker, P. R., 57, 69, 277  
 Burger, M., 348  
 Burgess, T. J., 139  
 Burghardt, T. P., 394  
 Burgos, F. S., 588  
 Burneau, A., 505  
 Burridge, K., 398  
 Burstein, E., 565  
 Burt, S. K., 442, 447  
 Bush, S. F., 88  
 Bushby, R. J., 472, 476  
 Butler, J. E., 56, 58, 66-68  
 Buttershaw, J., 57, 58, 60  
 Bystrov, V. F., 119  
  
**C**  
 Cabane, B., 181, 182, 184, 206  
 Caillaud, H., 528  
 Caldin, E. F., 591, 592  
 Calef, D. F., 574, 587, 589  
 Calladine, C. R., 122, 126, 128  
 Calvin, M., 348  
 CAMPION, A., 549-72; 550,  
 555, 558-60, 564, 570  
 Cantor, R. S., 181, 182, 187,  
 193, 196, 204, 205  
 Capizzi, M., 149, 150  
 Caprio, V., 88, 92  
 Cardinal, J. R., 181  
 Carey, M. C., 182, 184, 197,  
 206, 208  
 Carles, M., 498  
 Carlstrom, G., 181  
 Carmeli, B., 584  
 Carnie, S. L., 331, 341, 526  
 Carpenter, B. K., 590  
 Carr, H. Y., 460  
 Carrick, P. G., 56  
 Carrington, A., 56-58, 60  
 Carrington, T., 278, 282  
 Cartaud, J., 260, 266  
 Carter, R. L., 568  
 Cartwright, G. S., 398  
 Caruthers, M. H., 121  
 Caspar, D. L. D., 244, 260,  
 263, 266, 268  
 Castellani, C., 154  
 Castellani, L., 260, 266  
 Castellano, S., 477  
 Castner, T. G., 150  
 Catlow, C. R. A., 537  
 Cechova, D., 117  
 Cederbaum, L. S., 278, 281,  
 285-87, 304, 312  
 Celestino, K. C., 429  
 Ceperley, D. M., 535, 545  
 Cesaro, S., 521  
 Ceska, T. A., 261, 262, 268  
 Ceulemans, A., 493  
 Chabay, L., 215, 220  
 Chachaty, C., 182  
 Chaikin, A. M., 508  
 Champion, P. M., 277  
 Chan, D. Y. C., 444  
 Chan, S. H. P., 260, 266  
 Chan, S. I., 182  
 Chan, S. O., 460  
 Chan, S. S., 395  
 Chandler, D., 185, 321, 326,  
 329, 331-33, 336, 340,  
 341, 437-40, 442, 444-46,  
 574, 582, 583, 585, 586,  
 592  
 Chandrasegaran, S., 129  
 Chandrasekhar, J., 323-25, 333,  
 339, 341, 343, 526, 587  
 Chandrasekhar, S., 203, 204,  
 579  
 Chandrasekharan, V., 537  
 Chang, B.-W. B., 249, 261, 265  
 Chang, C.-F., 249, 260, 266  
 Chang, H. W., 519  
 Chang, R. K., 550, 565, 567  
 Changeux, J.-P., 260, 266  
 Chao, A. W., 399  
 Chapman, J. N., 270  
 Chapuisat, X., 287  
 Charvolin, J., 182, 184, 193,  
 194, 196, 205, 480  
 Chasanov, M. G., 413  
 Chauvel, P., 586  
 Chen, C.-J., 39  
 Chen, C. Y., 565  
 Chen, S.-H., 181, 182, 184,  
 187, 193, 196, 197, 204  
 Chen, W. P., 565  
 Chen, Y. J., 565  
 Cheng, C., 70  
 Cheng, D. M., 127  
 Cheng, J. C., 214, 215  
 Chermette, H., 430  
 Cherry, R. J., 395, 398, 399  
 Chesnokov, E. N., 70  
 Cheung, L. M., 279  
 Cheung, S., 129  
 Chew, H., 567  
 Chew, W. M., 586  
 Chiang, C., 422  
 Chickos, J. S., 215, 228, 231,  
 234  
 Child, M. S., 277, 279, 305  
 Chiles, R. A., 329, 331-33,  
 341, 343, 587, 592  
 Chinomi, K., 561  
 Chiu, W., 245, 258, 261, 264,  
 270  
 Chou, S. H., 112, 124, 126-31  
 Chowdhury, M. R., 527  
 Christian, S. D., 445  
 CHRISTIANSEN, P. A., 407-  
 32; 416, 418-21, 424, 426,  
 427, 429  
 Christmann, K., 565  
 Christova, R., 357  
 Chu, J. O., 70  
 Chu, S. Y., 424  
 Chu, Y. G., 129  
 Chuang, T. J., 575, 576  
 Chudley, C. T., 537  
 Chui, T., 144  
 Cicotti, G., 327, 537  
 Cieloszyk, G. S., 150  
 Clark, L. D., 472, 476  
 Clark, R., 214, 215  
 Clark, W. R., 393  
 Clauwaert, J., 401  
 Clementi, E., 323-25, 338, 436  
 Cleveland, C. L., 537  
 Cliff, D. I., 56  
 Clore, G. M., 122, 128  
 Cohan, N. V., 218  
 Cohen, D., 429  
 Cohen, H., 261, 264, 270  
 Cohen, J. S., 422, 425, 429  
 Cohen, M. H., 146  
 Cohen, M. L., 545  
 Coladonato, M. H., 576-78  
 Collet, P., 371, 372  
 Collins, M. A., 277, 278  
 Colonosmos, P., 588  
 Conboy, C. B., 586  
 Cone, R. A., 380, 395, 396,  
 398  
 Conner, W. T., 62, 63  
 Connerade, J.-P., 302  
 Connick, R. E., 412  
 Connor, J. N. L., 316, 590  
 Cook, D. M., 552  
 Cook, J. M., 57  
 Copeland, G. E., 56  
 Cordova, L., 262, 267  
 Corongiu, G., 323, 325, 436  
 Corti, M., 179-82, 184  
 Cossart, D., 289  
 Cossart-Magos, C., 289  
 Costas, M., 182  
 Costello, M. J., 260, 266  
 Court, D., 121  
 Courtney, S. H., 584, 585  
 Cowan, R. D., 418, 422, 429  
 Cox, J. D., 92  
 Craig, D. P., 225  
 Craig, R., 262, 267  
 Creighton, J. A., 563, 565  
 Crepeau, R. H., 261, 262, 268  
 Cribb, P. H., 592  
 Crick, F. H. C., 121

- Crippen, G. M., 132, 134  
 Criss, C. M., 342  
 Crist, B. V., 227  
 Crofton, M. W., 58, 60, 61  
 Cross, J. B., 575  
 Cross, V. R., 452  
 Crothers, D. M., 163, 167  
 Crothers, D. S., 277, 305  
 Crowther, R. A., 245, 262, 267  
 Csizmadia, I. G., 507  
 Cuevas, M., 151  
 Cullis, C. F., 35  
 Cumming, M. A., 261  
 Cummings, P. T., 329, 333, 334  
 Cureton, C. G., 493, 506, 521  
 Curl, R. F. Jr., 56, 57, 69  
 Currier, R., 306, 308  
 Curtiss, C. F., 183, 184, 190  
 Cusack, S., 261, 266  
 Cyr, D., 380, 385, 401
- D**
- Dagata, J. A., 302  
 Dagenais, M., 55, 68  
 Daido, H., 360  
 Dainton, F. S., 101  
 D'Alessio, A., 46  
 Dammel, R., 575, 576  
 Dammers, W. R., 350, 354, 370, 371  
 Das, G., 421  
 Dasch, C. J., 39, 49, 50  
 Dashevsky, V. G., 439  
 Datta, S., 70  
 Dattagupta, N., 163, 167  
 David, C. W., 333  
 Davidovics, G., 498, 499  
 Davidson, D. W., 441  
 Davidson, E. R., 278, 280, 282, 419, 422, 472  
 Davies, B., 493, 500  
 Davies, P. B., 55-58  
 Davis, E. A., 140-42, 144  
 Davis, H. T., 84, 100  
 Davis, S. P., 58  
 Davoust, J., 393  
 Davydov, A. S., 277, 278  
 Deatherage, J. F., 261  
 Deb, B. M., 281  
 de Bruin, S. H., 131  
 DeCelis, B., 537  
 DeConde, K., 149  
 de Gennes, P. G., 181, 182, 187, 190, 193, 196, 197, 203, 204, 206, 526  
 Degiorgio, V., 179-82, 184  
 Degn, H., 374  
 DeGroot, C. P. M., 562  
 Dehareng, D., 287  
 DeJong, P. G., 462  
 Dejus, R., 537  
 DeKepper, P., 348, 354, 355, 357, 361, 362  
 Dekock, R. L., 412, 413  
 De Lacey, E. H. B., 181, 182, 187, 190, 193, 196, 197, 201, 203, 204, 207, 208  
 de la Vega, J. R., 591  
 Delbruck, M., 398, 399  
 deLeeuw, S. W., 334  
 DeLeon, N., 586  
 Delgas, W. N., 550  
 DeLisi, C., 399  
 Deloche, B., 480  
 deLonggi, P. A., 323  
 DeLorenzi, G., 537  
 Delos, J. B., 306  
 De Lucia, F. C., 61  
 DeMaeyer, L., 162, 168, 347  
 DeMeuse, M., 576  
 Demuth, J. E., 556, 565, 569  
 Demuynck, C., 62, 63  
 Denbigh, K. G., 355  
 den Hartog, J. F., 129  
 Denis, M., 62, 63  
 Denisevich, E. V., 40, 41  
 Denny, W. A., 122, 127  
 DeRaedt, B., 329  
 Derjaguin, B. V., 37  
 de Rooij, M., 129  
 DeRosa, F., 149, 150  
 DeRosier, D. J., 244, 252, 262, 267  
 Derzhanski, A., 182, 204  
 Derzko, Z., 380, 398  
 Desclaux, J. P., 408, 409, 411, 414, 419, 422, 423  
 Desjardins, S. G., 592  
 Desouter-Lecomte, M., 287  
 Destombes, J. L., 58, 60, 62, 63  
 Deutch, J. M., 321, 326, 574, 581  
 Deutsche, C. W., 218  
 Devaux, P. F., 393  
 Devlin, F., 216, 231, 235, 237  
 de Xammar Oro, J. R., 170  
 Dianoux, A. J., 472  
 Di Bartolo, B., 277  
 DiCastro, C., 154  
 Dickerson, R. E., 122  
 Dickerson, W. H., 484  
 Dickey, J. M., 529  
 DiConde, K., 144  
 Diekmann, S., 161, 163-65, 167, 169-71  
 Diem, M., 215, 227, 228, 234, 237  
 Dietrich, I., 270  
 DiLella, D. P., 567  
 Dill, D., 302, 303  
 Dill, J. D., 181, 182, 187, 193, 196, 204  
 Dill, K. A., 181, 182, 187, 193, 196, 201, 204-6  
 DiLorenzo, A., 46  
 Dimaura, L., 289  
 Ding, D. W., 161, 163  
 DiNola, A., 326, 328  
 Dirac, P. A. M., 307  
 Ditchfield, R., 436  
 Dixon, M., 537  
 Dixon, R. N., 68  
 Dodge, L. G., 31  
 Dodson, B. W., 148  
 Doi, Y., 400  
 Doll, D. W., 180, 181, 197, 206  
 Doll, J. D., 592  
 Dolnik, M., 357, 359, 362, 374  
 Domcke, W., 278, 281, 285-87, 312  
 Dong, R. Y., 472, 475  
 Dore, J. C., 527  
 Dorman, M. A., 121  
 Dornish, F. L., 38, 47  
 Dorset, D. L., 251, 260, 266, 271, 272  
 Dougherty, T. P., 568  
 Dourlent, M., 163  
 Dove, C., 374  
 Dove, M. T., 540, 541  
 Dower, S. K., 399  
 Downing, K. H., 263, 265  
 Dragsten, P. R., 396  
 Drake, A. F., 221, 234  
 Dressler, K., 301  
 DROBNY, G. P., 451-89; 111, 112, 124, 126, 127, 131, 457, 458, 461, 462, 464, 468, 470, 472  
 Dubochet, J., 249, 263, 269  
 Dubs, A., 113  
 Dubs, M., 494, 511  
 Duerre, D. E., 139  
 Dugwell, D. J., 35  
 Dulos, P., 357-59, 361, 362  
 Dultz, W., 542  
 Dumper, K., 57  
 Dunning, F. B., 290  
 Duplessix, R., 181, 182, 184  
 Dupuy, C. G., 576-78  
 Durand, Ph., 429  
 Dutton, J., 77  
 Duval, X., 40, 41, 48  
 Dux, L., 260, 266  
 Dworkin, A., 528  
 Dymann, A., 56, 58  
 Dynes, R. C., 148, 151, 154
- E**
- Early, T. A., 129  
 Ebbajo, I., 537  
 Eberle, B., 428  
 Eckmann, J. P., 371, 372

- Eckstrom, H. C., 161, 162  
 Edelman, G. M., 398  
 Edelstein, N., 413  
 Edelstein, S. J., 249, 261, 262, 264, 267-69  
 Edelsten, P. M., 576-78, 582  
 Eden, D., 167  
 Edholm, O., 182, 199  
 Edidin, M., 380, 396, 398  
 Edsall, J. T., 433  
 Edwards, D. M. F., 323, 325, 333, 334, 336  
 Edwards, P. P., 139, 140, 142, 143  
 Egdell, R. G., 430  
 Egeiban, O. M., 78  
 Egelman, E. H., 262, 267  
 Egelstaff, P. A., 323  
 Egerton, T. A., 550  
 Eguchi, T., 583, 585, 588  
 Ehrenberg, M., 395  
 Eich, G. W., 106, 109, 456  
 Eigen, M., 162, 168, 347, 399  
 Eisenberg, H., 173  
 Eiseenthal, K. B., 575, 576, 589  
 Ekberg, S., 511  
 Eland, J. H. D., 277  
 Elias, J. G., 167  
 Elliger, C. A., 528  
 Elliott, J. M., 57  
 Elliott, R. J., 537  
 Ellis, D. E., 412, 413, 430  
 Ellis, H., 216  
 Ellison, G. B., 57  
 ELSON, E. L., 379-406; 380-91, 395, 396, 398-400, 402  
 Emert, J., 584  
 Emid, S., 457  
 Emsley, J. W., 472, 475, 476, 478, 480, 481  
 Endo, Y., 56, 57, 59  
 Engel, A., 260, 266  
 Engelking, P. C., 289  
 Englander, S. W., 116, 130  
 English, A. D., 504  
 English, J. H., 284, 289, 512, 515  
 Engلمان, R., 277, 278, 305  
 Engstrom, S., 327  
 Ennis, P. D., 260, 265  
 Entelis, S. G., 579, 587  
 Entine, G., 380, 398  
 Eppenga, R., 543  
 Epstein, I. R., 348, 354, 357, 362, 374  
 Erickson, H. P., 254, 256  
 Eriksson, J. C., 181  
 Ermani, L., 494, 511  
 ERMILER, W. C., 407-32; 411, 417-21, 423, 424, 426, 429  
 Ernst, R. R., 106-10, 134, 452, 453, 456-58, 460, 461, 464, 467, 472  
 Erpenbeck, J. J., 525  
 Eters, R. D., 537  
 Eu, B. C., 314  
 Evans, D. J., 326-28  
 Evans, G. T., 576, 586  
 Evenson, K. M., 55-58, 60, 69  
 Ewool, K. M., 504  
 EZRA, G. S., 277-320  
  
**F**  
 Fackerell, A. D., 56  
 Fano, U., 301, 302  
 Farley, J. W., 60  
 Farmer, J. D., 374  
 Faulkner, T. R., 214, 218, 226  
 Fedoseev, D. V., 37  
 Feher, G., 380, 402  
 Feigenbaum, M. J., 350, 371  
 Feigon, J., 122, 127  
 Felder, P., 493, 494, 505, 506  
 Felder, S., 396, 400  
 Felker, P. M., 584, 585  
 Felton, P. G., 88  
 Ferrari, C. A., 58, 60  
 Ferrario, M., 534  
 Ferrier, R. P., 243  
 Feynman, R. P., 281, 305, 329  
 Field, R. J., 348, 354, 357, 359, 365  
 Findley, G. L., 302  
 Finer-Moore, J., 260, 264  
 Finney, J. L., 324, 447  
 Fischbach, G. D., 398  
 Fischer, H., 575  
 Fischer, S. F., 512, 515  
 Fisher, M. E., 443  
 Fixman, M., 327, 576  
 Flaherty, J. E., 360  
 Fleischman, M., 563  
 Fleming, G. R., 574, 584-86, 589, 590  
 Fleming, R., 58, 69  
 Flores, J., 287  
 Flory, P. J., 181-83, 185, 187, 193, 196, 204, 473  
 Flouquet, J., 153, 154  
 Flurckick, K., 537  
 Flynn, C. P., 537  
 Flynn, G. W., 64, 69, 70, 512, 577  
 Fogarasi, G., 228, 237  
 Fonseca, T., 585  
 Foote, C. S., 578  
 Fortuin, J. M. H., 350, 354, 370, 371  
 Foster, P. J., 35  
 Foster, S. C., 56, 58, 61  
 Fowler, W. E., 262, 267  
 Fox, F., 270  
 Fox, J. R., 526, 536  
 Fozzoni, P., 152, 154  
 Francis, N., 262, 267  
 Franck, J., 575  
 Frank, E., 398  
 Frank, J., 245, 258, 260, 263, 266, 268  
 Frank-Kamenetskii, D. A., 77  
 Franklin, J. L., 62  
 Franks, F., 433, 444  
 Frauenfelder, H., 592  
 Frechet, D., 127  
 Fredericq, E., 159, 160  
 Fredin, L., 505, 506, 508, 509, 520, 521  
 Fredrickson, G. H., 536  
 Freed, K. P., 277, 305, 590  
 Freedman, T. B., 219, 225, 227, 234, 237  
 Freeman, R., 106-8, 452, 453, 455, 461  
 FREI, H., 491-524; 500, 506-11, 513, 514, 516, 518-21  
 French, J. B., 287  
 French, R. N., 342  
 Frenkel, D., 525, 526, 543, 544  
 Frenkiel, T. A., 128  
 Freund, A., 350, 353, 363, 365-67, 370  
 Freund, R. S., 303  
 Frey, H. M., 586  
 Frey, T. G., 260, 266  
 Fricke, B., 408, 414  
 Frieden, C., 400  
 Friedman, H. L., 329, 445, 574, 589-91  
 Friedman, L. R., 140, 142  
 Fries, P. H., 331, 341, 575  
 Frisch, H. L., 192, 350, 354, 360, 370  
 Fritzsche, H., 151  
 Fromherz, P., 181, 196, 206  
 Fu, K. J., 284, 292, 293, 303  
 Fujimori, M., 174, 175  
 Fujiyoshi, Y., 263, 265  
 Fukase, T., 154  
 Fukui, K., 592  
 Fukuyama, H., 145  
 Furrow, S., 357  
 Furtak, T. E., 550, 564, 568  
 Furubayashi, T., 151, 154  
  
**G**  
 Gabelnick, S. D., 413  
 Gabrielyan, R. G., 592  
 Galgani, L., 374  
 Galloy, C., 287  
 Ganesh, K. N., 181  
 Ganti, G., 575  
 Garbow, J. R., 462, 464  
 Gardiner, W. C., 47  
 Garland, D., 285  
 Garland, P. B., 395  
 Garrett, B. C., 277, 279, 578, 582, 590

## 604 AUTHOR INDEX

- Garrity, D. K., 585  
 Garroway, A., 470  
 Gauthier-Roy, B., 498, 499, 512  
 Geerts, H., 396, 401  
 Geiger, A., 340-42, 441, 442, 444  
 Geiger, B., 400  
 Geiger, J. S., 56, 57, 70  
 Geiseler, W., 354, 360  
 GELBART, W. M., 179-211; 181, 182, 184, 185, 187-94, 196, 205, 206, 208, 472  
 Gellatly, B. J., 324  
 Gennett, T., 590  
 Gentry, W. R., 516  
 George, T. F., 277, 305  
 Gerber, B. R., 175, 176  
 Gerber, R. B., 287  
 Gerber, W. H., 279, 297  
 Gerhardt, H., 56  
 Gersh, M. E., 56  
 Gershenzon, Y. M., 57, 102  
 Gertner, B. J., 582  
 Gervaeert, Ya. G., 77  
 Giannoni, M. J., 287  
 Gibbons, T. G., 537  
 Gibson, C., 102  
 Giese, C. F., 516  
 Gilbert, R. G., 583  
 Gilham, P. T., 129  
 Gill, G., 460  
 Gillan, M. J., 329, 537  
 Gillbro, T., 584, 586  
 Ginter, M. L., 427  
 Gislason, E. A., 277, 279, 305  
 GLAESER, R. M., 243-75; 243, 245, 249, 251, 253, 257, 258, 260, 264, 266, 269-72  
 Glansdorff, P., 348, 360  
 Glass, L., 359  
 Glick, H. A., 171  
 Glyde, H. R., 526  
 Gnädig, K., 576  
 Go, N., 132, 133, 327  
 Goalwin, P., 155  
 Gohin, A., 219  
 Golan, D. E., 398  
 Goldanskii, V. I., 591  
 Goldbeter, A., 348, 354, 356, 360  
 Golden, D. M., 582  
 Goldenberg, M., 584  
 Goldhirsch, I., 182  
 Goldman, S., 326, 444  
 Goldstein, H., 327  
 Gole, J. L., 288  
 Golovina, N. B., 36, 41  
 Golub, G. H., 304  
 Gomel, J., 260, 266  
 Gomes, J. A. N. F., 585  
 Gonda, I., 102  
 Gondal, M. A., 56  
 Goodall, D. M., 493, 506, 521  
 Goodby, J. W. G., 526, 528  
 Goodenough, D. A., 260, 266  
 Goodman, J., 246, 252, 253  
 Goodman, J. L., 589  
 Goodman, L., 279  
 Goodsaid-Zalduondo, F., 400  
 Goody, R. S., 262, 267  
 Gorkov, L. P., 143  
 Gorodetskii, A. E., 36, 40, 41  
 Gorti, S., 380, 401  
 Götz, W., 148, 154  
 Gough, G. R., 129  
 Graben, H. W., 530, 531  
 Gräber, P., 177  
 Graf, F., 279, 297  
 Graham, R., 310  
 Graham, W. H., 589  
 Grampp, G., 590  
 Gransden, S., 506, 520  
 GRANT, E. R., 277-320; 283, 284, 290-93, 295, 296, 300-3  
 Grant, I. P., 414-16  
 Grasman, J., 349, 360  
 Grasselli, P., 402  
 Gray, B. F., 77, 78, 88, 101, 102  
 Gray, C. G., 326, 329, 331, 333, 342, 343  
 Gray, G. W., 476, 526, 528  
 Gray, P., 77, 83, 84, 88, 90-92, 99, 101, 102  
 Gray, S. K., 309  
 Graziani, K. R., 348, 374  
 Greene, B. I., 303  
 Greene, E. F., 35  
 Greenler, R. G., 551, 555  
 Gregory, A. R., 280  
 Grest, G. S., 154  
 Griffin, D. C., 418, 422, 429  
 Griffin, R. G., 457  
 GRIFFITHS, J. F., 77-104; 77, 78, 86, 88, 90-92, 97, 102  
 Grigera, J. R., 170  
 Grigolini, P., 585  
 Grimmelman, E. K., 574  
 Grimsditch, M., 541  
 Grisdale, R. O., 35  
 Grizzle, V. M., 559, 560  
 Gronenborn, A. M., 122, 128  
 Groody, E. P., 121  
 Grosjean, M., 214  
 Grote, R. F., 574, 580, 581, 584  
 Grubb, S. G., 291, 292, 300-3  
 Gruen, D. W. R., 180-82, 187, 190, 193, 194, 196, 197, 201, 203, 204, 206-8  
 Gubbins, K. E., 321, 323, 326, 329, 331, 334, 335, 342, 343  
 Gudeman, C. S., 58, 60  
 Guedens, W., 401  
 Guillope, M., 537  
 Guittet, E., 127  
 Gunde, R., 494, 505  
 Günthard, Hs. H., 279, 297, 493, 494, 500, 505, 506, 511  
 Gupta, V. P., 503  
 Gupte, S., 399  
 Gurney, R. W., 342  
 H  
 Ha, T.-K., 279, 297, 500  
 Haak, J. R., 326, 328, 439, 447  
 Haan, S. W., 181, 182, 196, 201  
 Haasnoot, C. A. G., 110, 127, 129, 131  
 Haber, K. S., 284, 293, 295  
 Haberkorn, R. A., 108, 128  
 Habitz, P., 429  
 Hack, W., 56  
 Hackenbrock, C. R., 399  
 Haddon, R. C., 289  
 Haelberlin, U., 468  
 Haese, N. N., 58, 60  
 Hafner, P., 418, 426, 429  
 Häger, J., 515  
 Hagerman, P. J., 167  
 Hagler, A. T., 325, 341, 342, 447  
 Hahn, E. L., 460  
 Hahn, M., 261  
 Haile, J. M., 200, 326, 331, 530, 531  
 Hakuta, K., 56, 57  
 Hall, J., 69  
 Hall, R. T., 492  
 Hall, R. W., 535, 545  
 Halle, B., 181  
 Haller, E., 285-87, 304, 312  
 Haller, G., 550  
 Hallmark, V. M., 558, 559  
 Halonen, L., 498, 500  
 Hamada, Y., 56, 65, 503  
 Hamann, D. R., 422  
 Hamaka, H. F., 218  
 Hamilton, P. A., 56-58  
 Hander, H., 45, 46  
 Handy, B. J., 55-57  
 Haner, M., 260, 266  
 Hannon, L., 355, 363  
 Hänsch, T. W., 56  
 Hansen, J. P., 439, 440, 526, 529, 535  
 Hanssen, K. J., 244  
 Hanstock, C. C., 127  
 Hanusse, P., 348  
 Haouche, G., 181  
 Hardin, A. H., 550  
 Hardwicke, P. M. D., 260, 266

- Hare, D. R., 112, 122, 124,  
126-32, 134  
Harrer, W., 590  
Harris, A. L., 577  
Harris, C. B., 577  
Harris, D. O., 504  
Harris, J. R., 269  
Harris, R. A., 592  
HARRIS, S. J., 31-52; 42  
Harrison, S. W., 436, 439  
Hart, E. J., 583  
Hart, M., 374  
Hartley, G. S., 180, 206, 433  
Hase, W. L., 574, 578  
Hasha, D. L., 583, 585, 588  
Hashi, T., 455, 457  
Hasko, S. M., 77, 88, 90-92,  
97, 102  
Hassard, B. D., 100  
Hastings, J. W., 348  
Hatanaka, H., 455, 457  
Hauge, R. H., 506, 520  
Havel, T. F., 132, 134  
Hawke, P. S., 139  
Hawkins, R. K., 323  
Hay, P. J., 413, 418, 422, 423,  
425, 429, 430  
Hay, S., 68  
Hayashi, C., 348  
Hayes, R. G., 413  
Haynes, B. S., 42, 45, 46, 49  
Hayter, J. B., 181, 182, 184  
Hayward, S. B., 257, 258, 260,  
264, 269-71  
Heath, C. E., 35  
Heaven, M., 289  
Hebert, H., 260, 266  
Heemskirk, A. H., 350, 354,  
370, 371  
Heerschap, A., 110, 129  
Hegerl, R., 263, 268  
Heine, V., 528  
Heintz, V. J., 234  
Heinzelmann, E. W., 398  
Heinzinger, K., 333, 340  
Heisenberg, W., 285  
Helene, C., 163  
Helfand, E., 574, 579  
Heller, E. J., 305, 578  
Helmreich, E. J. M., 399  
Henderson, D., 185  
Henderson, R., 244, 245, 248,  
250, 256, 260, 262, 264,  
269, 272  
Hendra, P. J., 563  
Hendrikx, Y., 182, 184, 193,  
194, 196, 205  
Henis, Y. I., 399  
Henriksson, V., 181  
Herbage, D., 175  
Herbst, E., 61  
Herman, M. F., 305, 306, 308,  
314, 578  
Hermann, H. W., 69  
Herr, K. C., 64  
Herring, F. G., 331, 341  
Herschbach, D. R., 285  
Hertel, G., 151, 154  
Hertel, I. V., 277  
HERZBERG, G., 1-30; 53, 277,  
301, 420  
Herzfeld, K. F., 139  
Hess, B. A., 233, 348, 354,  
356, 360, 361, 374, 375  
Hess, H., 144  
Hess, H. F., 149  
Hester, R. K., 452  
Hewat, E. A., 261, 262, 266,  
268  
Hexter, R. M., 557  
Hibbs, A. R., 305, 329  
Hickman, R. B., 326, 328  
Hikami, F., 360  
Hilbers, C. W., 110, 129, 131  
Hill, R. M., 144  
Hill, T. L., 183, 184, 190, 443  
Hillen, W., 121, 129, 161, 163,  
165, 167, 169, 170  
Hills, G. J., 256, 328  
Hills, G. W., 57  
Hinkley, E. D., 56  
Hinz, A., 56  
Hirata, F., 326, 331, 332, 335,  
526  
Hirata, F. H., 326, 331, 332,  
335, 336  
HIROTA, E., 53-76; 56-59, 62,  
63, 65, 66, 68, 69  
Hirschfelder, J. O., 183, 184,  
190  
Hirt, T. J., 35  
Hiwatari, Y., 528  
Ho, M.-H., 251  
Ho, P., 70  
Hoatson, G. L., 457  
Hochstrasser, R. M., 584  
Hoehli, L., 399  
Hoehli, M., 399  
Hoell, J. M., 56  
Hoeve, C. A. J., 184  
Hoffbauer, M. A., 516  
Hoffman, G. W., 575, 576  
Hoffman, R., 412  
Hoffman, W. F. III, 499  
Hoffman, W. P., 40  
Hofmann, W., 263, 269  
Hogan, M., 163, 167  
Hogrel, J. F., 163  
Höhnerbach, M., 310  
Hoiland, H., 181  
Holbrook, K. A., 519, 579, 585  
Holcomb, D. F., 155  
Hollingshead, C. J., 260, 266  
Holloway, S., 558  
Holmes, K. C., 262, 267  
Holtzberg, F., 153, 154  
Holzwarth, G., 214, 215, 220,  
226  
Homanen, L., 500-2  
Homann, K. H., 46, 47  
Honda, K., 568  
Honeycutt, J. D., 535  
Hoover, W. G., 326, 328, 525  
Hopkins, J. B., 279, 288, 297  
Hoppe, W., 244, 245, 263, 268  
Hoppensteadt, F. C., 360  
Hore, P. J., 110, 129  
Horn, R. G., 182, 184, 197,  
207  
Horne, R. W., 261, 269  
Horsley, J. A., 412  
Horsthemke, W., 355, 363  
Hosur, R. V., 110, 119  
Hotokka, M., 430  
Hou, K. C., 35  
Hou, Y., 380, 396, 398  
Hougen, J. T., 56, 57  
Houssier, C., 159, 160  
Hovmoller, S., 260, 266  
Howard, C. J., 56, 57, 59  
Hoye, J. S., 322, 323, 325,  
326, 329, 331-34  
Hsi, S., 472, 478  
Hsu, C. S., 331, 336, 340, 586  
Hsu, E. C., 214, 226  
Huang, K., 277, 281  
Huang, Y., 107  
Hubbard, J., 588  
Hubbard, J. B., 588  
Huber, J. R., 505  
Huber, K. R., 582  
Huber-Wäldli, P., 494  
Hudson, B. S., 277  
Hudson, J. L., 348, 371, 374  
Huebel, J. G., 139  
Hugus, Z. Z. Jr., 412  
Huler, E., 325  
Hunziker-Kwik, E.-H., 113  
Huppert, D., 590  
Hurst, J. R., 578  
Hush, N. S., 592  
Huyn-Dihn, T., 127  
HYNES, J. T., 573-97; 574-78,  
580-86, 588-92
- I
- Ibrahim, M. J., 324, 325, 333  
Icenogle, R. D., 380, 381, 383-  
86, 389, 402  
Igolen, J., 127  
Ikari, K., 341, 342  
Ikeda, S., 561  
Ikebara, M., 127  
Ikuta, S., 129  
Ilgenfritz, G., 176  
Il'in, D. S., 57  
Imbach, J. L., 127  
Imoto, S., 413

## 606 AUTHOR INDEX

- Impey, R. W., 323-25, 327,  
333, 339, 341, 526, 532,  
535, 541-43
- Indritz, D., 92, 97
- Ingold, C. K., 587
- Inoue, Y., 561
- Insola, A., 88, 92
- Ioffe, A. F., 146
- Irgens-Defregger, A., 512, 515
- Isaacs, N. S., 592
- Isaacson, M., 252
- Ise, N., 162
- Ishida, S., 154
- Ishikawa, Y., 417, 429
- Ishimoto, H., 151, 154
- Ishiwata, T., 57
- Israelachvili, J. N., 182, 184,  
185, 197, 200, 206-8
- Itakura, K., 129
- Ito, A., 360
- Ivanova, M., 357
- J
- Jacob, F., 121
- Jacob, J. S., 260, 266
- Jacobson, B. S., 576
- Jacobson, K., 380, 396, 398-400
- Jacobson, K. A., 392
- Jacucci, G., 537, 542
- Jaeger, W. I., 374
- Jaenicke, W., 590
- Jaffe, D., 483, 484, 486
- Jaffe, J. S., 249
- Jagannathan, N. R., 331, 341
- Jahn, H. A., 280
- Jahnig, F., 182
- Jalenak, W. A., 584
- Jalkanen, K., 216
- James, T. L., 134
- Jang, D., 577
- Jansco, G., 333, 340
- Janssen, H. G. J. M., 131
- Jap, B. K., 251
- Jaume, J., 589
- Javadi, K., 592
- Jayaraman, K., 127
- Jaynes, E. T., 189, 190
- Jeanmaire, D. J., 563
- Jeener, J., 105, 107, 452, 453,  
484
- Jefferson, D. A., 251
- Jeng, T. W., 261, 264
- Jennings, B. R., 175
- Jennings, D. A., 56, 57, 59
- Jesior, J.-C., 249, 262, 268, 269
- Joachim, C., 306
- Johari, G. P., 527
- John, E. M. M., 129
- Johns, J. W. C., 55-58, 68
- Johnson, B. R., 314
- Johnson, D. C., 400
- Johnson, K. H., 412
- Johnson, L. N., 255
- Johnson, P. M., 290, 292, 395
- Jolicard, G., 306
- Jonas, J., 583, 585, 588
- Jones, J. C., 88
- Jones, L. H., 511
- Jongeward, G. A., 592
- Jonsson, B., 324, 327, 341,  
441, 447
- Jorgensen, P. L., 260, 266
- Jorgensen, W. L., 200, 323-25,  
327, 333, 336, 337, 339-  
43, 442, 446, 526, 529,  
586-88
- Jortner, J., 146, 277, 286
- Joubert, F. J., 113
- Jovin, T. M., 395
- Judd, B. R., 278, 310
- Judd, J. S., 260, 262, 264
- Jung, M., 161, 163, 165, 169,  
170
- Jungen, Ch., 301-3
- K
- Kaelberer, J., 537
- Kahn, J. D., 576-78
- Kahn, L. D., 175, 176
- Kahn, L. R., 413, 415-20, 422,  
423, 429
- Kai, T., 349-54, 360, 369, 371
- Kalk, A., 108
- Kalkert, P., 56
- Kallenbach, N. R., 116, 130
- Kam, Z., 173
- Kamenka, N., 181
- Kan, L. S., 127, 129
- Kanamori, H., 56, 58, 66-68
- Kanaya, K., 263, 268
- Kapitza, H. G., 392
- Kaplan, J., 374
- Kaplan, J. I., 451
- Kapral, R., 574-76
- Kapralova, G. A., 508
- Kaptein, R., 118, 119, 121,  
124, 127, 129, 133
- Karkach, S. P., 285, 314, 316
- Karlsson, B., 260, 266
- Karlstrom, G., 324, 341
- Karnicky, J. F., 322
- Karow, M. L., 400
- Karplus, M., 121, 128, 129,  
324, 325, 341, 342, 447,  
574
- Kasatani, K., 67
- Kasha, M., 591
- Kasper, J. V. V., 56, 69
- Kasuya, T., 56
- Katchalsky, A., 173
- Kato, H., 592
- Kato, S., 592
- Katre, N. V., 260, 264
- Katsumoto, S., 144, 154-56
- Katz, B., 293
- Kauzmann, W., 433
- Kaveh, M., 145, 147
- Kawabata, A., 144
- KAWAGUCHI, K., 53-76; 56-  
59, 62, 63, 65-68
- Kawasaki, K., 67
- Kawasaki, M., 67
- Kawiecki, R., 231, 235, 237
- Kayser, R. F., 588
- Kazarinoff, N. D., 100
- Keams, D. R., 121, 122, 127,  
129
- Keck, J. C., 574
- Keeler, R. N., 139
- Keepers, J. W., 134
- Keery, K. M., 584
- Keiderling, T. A., 214, 215,  
226-31, 233, 234
- Keller, P., 182, 184, 193, 194,  
196, 205
- Keller, P. M., 400
- Keller, R. M., 113
- Kellerman, R., 550
- Kelley, D. F., 577, 578
- Kempainen, E., 505
- Kennedy, R. A., 58, 60
- Kerker, M., 567
- Kerley, G. I., 326
- Kerman, A. K., 306
- Kern, C. W., 425
- Kerner, E. H., 306
- Kerr, C. M. L., 56
- Kessel, M., 261, 267, 270
- Kessler, H., 110
- Kestner, N. R., 324
- Kevorkian, V., 35
- Khaikhin, S. E., 84, 100
- Khmelnitskii, D., 143, 144
- Kho, C. J., 57
- Khundkar, L. R., 584
- Kikuchi, K., 175
- Kim, B.-I., 413
- Kim, K. C., 58, 69
- Kimber, B. J., 128
- Kimura, H., 182
- Kincaid, R. H., 439
- King, N. R., 261
- Kinoshita, N., 155
- Kirichuk, V. S., 263, 268
- Kirkpatrick, S., 146
- Kirsten, D., 56
- Kiselev, N. A., 263, 268
- Kishi, K., 561
- Kishore, K., 90, 92
- Kitagawa, M., 154
- Kivenen, A., 498, 499
- Klappe, K., 129
- KLEIN, M. L., 525-48; 323-25,  
329, 333, 336, 339, 439,  
526, 528, 529, 532-39, 541
- Klein, R. D., 121
- Kleyn, A. W., 277, 279, 305



- Klochikhin, V. L., 591  
 Klöffler, M., 591  
 Klug, A., 244, 245, 252, 254, 256  
 Knape, H. E. G., 543  
 Knappek, E., 270, 272  
 Knauer, V., 263, 268  
 Knesch, G., 244  
 Knox, B. E., 260, 266  
 Knudsen, A. K., 504, 517-20  
 Knudson, S. K., 306  
 Kobayashi, S., 144, 154-56  
 Koch, G. L. E., 398  
 Koch, S. W., 537  
 Koehler, T. R., 544  
 Koehler, W. C., 181, 182, 184, 197  
 Koelling, D. D., 413  
 Koester, E., 56  
 Kogler, H., 110  
 Koike, Y., 154  
 Kojima, K., 326, 332  
 Kolb, C. E., 55  
 Kolesnikov, S. A., 57  
 Kolmeder, C., 515  
 Kolos, W., 279, 436  
 Komornicki, A., 238  
 Kondakov, V. I., 119  
 Koonin, S. E., 306, 314  
 Koppel, D. E., 181, 182, 187, 193, 196, 204, 380, 381, 383, 391-96, 398, 399  
 Köppel, H., 278, 281, 285-87, 304, 309, 310, 312  
 Korenowski, G. M., 292  
 Köros, E., 348, 359  
 Korst, N. N., 592  
 Kosower, E. M., 590  
 Kosykh, V. P., 263, 268  
 Koszykowski, M. L., 310  
 Kozlowski, S. A., 129, 131  
 Kraeutler, B., 575  
 Kramers, H. A., 578, 579  
 Krasnoperov, L. N., 55, 70  
 Kraus, W. A., 567  
 Krause, H., 542  
 Krause, S., 160, 175  
 Krauss, M., 415, 418, 422, 429  
 Kreevoy, M. M., 574, 591  
 Kreis, T., 400  
 Kresge, A. J., 592  
 Krieger, W., 515  
 Kruuv, J., 396  
 Kubota, S., 175  
 Kuharski, R. A., 324, 325, 329, 341, 342, 526, 535, 545  
 Kuhlbrandt, W., 261, 263, 266, 268  
 Kulander, K. C., 306  
 Kumar, A., 107, 134  
 Kunath, W., 261, 267, 270  
 Kuntz, I. D., 132, 134  
 Kunz, S. D., 110, 129  
 Kuroda, R., 221, 234  
 Kurz, J. L., 588  
 Kurz, L. C., 588  
 Kusalik, P. G., 331, 341  
 Kuschmitz, D., 356, 360, 361, 374, 375  
 Kushick, J., 325-27  
 Kustin, K., 348  
 Kwiram, A. L., 285, 472  
 Kyrala, G. A., 58, 60  
 L  
 Laaksonen, L., 412, 430  
 Labhart, H., 163  
 Labik, S., 326  
 Ladanyi, B. M., 329, 333, 582, 583, 586  
 Ladd, A. J. C., 326, 328, 544  
 Laguna, G. A., 58, 68, 69  
 Lahaye, J., 35  
 Lahti, P. M., 589  
 Laing, J. R., 305  
 Lal, B. B., 227  
 Lallemand, J. Y., 127  
 Lam, J. W., 399  
 Lam, K. S., 277, 305  
 Lamb, W. E. Jr., 58, 60  
 Lamba, P., 374  
 Landauer, R., 360  
 Lander, N., 121  
 Landmann, U., 537  
 Landridge-Smith, P. R. R., 279, 288, 297  
 Landsberg, B. M., 57  
 Landsberg, P. T., 145  
 Lane, E. H., 445  
 Langan, J., 589  
 Lange, R. H., 263, 268  
 Langer, J. S., 443  
 Langer, R., 244  
 Langford, C. H., 578  
 Langhoff, C. A., 576  
 Langhoff, S. R., 57, 69, 425, 429  
 Langmore, J. P., 252  
 Lanni, F., 380, 383, 386, 393, 394, 400, 401  
 Lapidus, L., 347  
 Lardner, T. J., 380, 398  
 Larkin, A. I., 143, 144  
 Larsen, B., 332  
 Laskowski, B. C., 429  
 Lathouwers, L. L., 279  
 Laube, B. L., 550, 565  
 Lauble, H., 128  
 Laux, L., 219  
 Lax, B., 56  
 Lax, I., 399  
 Lazaar, K. I., 586  
 Lazarides, E., 398  
 Le, H., 56  
 Leach, S., 289  
 Lebedev, Y. S., 57  
 Le Beuze, L., 430  
 Lebowitz, J. L., 192  
 Lebrun, E., 260, 266  
 Lee, C. Y., 342, 343, 441, 447  
 Lee, K. H., 119  
 Lee, N. K., 150  
 Lee, P. A., 142-44, 154  
 Lee, P. R., 83, 99  
 Lee, W. I., 401  
 Lee, Y.-P., 56, 59  
 Lee, Y. S., 410, 411, 414, 416-21, 423, 424, 426  
 Lefever, R., 348, 350, 354  
 Leffler, J. E., 589  
 Lefranc, G., 270  
 Legay, F., 512  
 Leger, L., 393  
 Legrand, J. C., 38  
 Legrand, M., 214  
 Lehni, M., 575  
 Leifer, D., 260, 264  
 Leizerov, B. A., 430  
 Lemaire, B., 182, 196, 202  
 Lemoine, B., 58, 60, 62, 63  
 Lemont, S., 64  
 Lenard, J., 398, 400  
 Leonard, K., 260, 266  
 Leone, S. R., 69  
 Leong, W. K., 57  
 Lepault, J., 249, 263, 269  
 Lepock, J. R., 396  
 Leslie, R. J., 400  
 Letsinger, R. L., 121  
 Leupin, W., 122, 127  
 Leuther, M. D., 400  
 Leutzing, E. E., 127  
 Levenson, C., 132  
 Levenspiel, O., 347  
 Levesque, D., 331, 333, 526, 536-38, 580, 581  
 Levine, R. D., 189, 190, 277  
 Levitt, M. H., 106, 109, 452, 456, 461, 464  
 Lewis-Bevan, W., 57  
 Leyh-Nihant, B., 287  
 Lianos, P., 181  
 Liao, P., 565  
 Licciardello, D. C., 146, 147, 149  
 Lichnovsky, P., 362, 374  
 Lie, G. C., 324  
 Liebermann, T. A., 399  
 Liebert, L., 480  
 Liebman, P. A., 380, 398  
 Liehr, A. D., 278, 282  
 Lifson, S., 325  
 Lightner, D. A., 227  
 Lignola, P. G., 77, 88, 90-92  
 Lim, E. C., 277, 288  
 Lin, S., 401  
 Lin, W., 142, 144, 147, 148, 155

- Lindenberg, P., 144  
 Lindholm, E., 292  
 Lindman, B., 179-82, 184, 193, 194, 196, 205  
 Lindon, J. C., 476, 480, 481  
 Lindsay, D. M., 285  
 Lineberger, W. C., 289, 304  
 Lingquist, O., 292  
 Linse, P., 324, 341  
 Lipkus, A. H., 577  
 Lipp, E. D., 216  
 Lissillour, R., 430  
 Litchinsky, D., 323  
 Litfin, G., 56  
 Litvak, M. M., 56  
 Liu, K., 516  
 Ljunggren, S., 181  
 Luch, J. M., 589  
 Loeb, L. B., 62  
 Lohr, L. L. Jr., 412  
 London, R. E., 472  
 Long, A. P., 153, 155  
 Long, S. R., 289, 292  
 Longuet-Higgins, H. C., 185, 279, 280, 282, 283, 285, 294, 296, 314, 316  
 Lorand, J. P., 574, 575  
 Lorenz, E. N., 371  
 Lorquet, A. J., 287  
 Lorquet, J. C., 287  
 Los, J., 277, 279, 305  
 Losonczy, M., 436  
 Lotka, A. J., 348  
 Lotta, T., 495, 498, 499, 502, 503, 521  
 Loubeyre, P., 535  
 Lovas, F. J., 56, 57  
 LOWE, M. A., 213-41; 231, 235-37  
 Lowe, R. S., 56, 57  
 Lown, J. W., 127  
 Lu, P., 129  
 Lubic, K. G., 56-60, 63  
 Lücke, K., 69  
 Luckhurst, G. R., 472, 475, 476, 478, 480, 481  
 Lund, B. M., 261  
 Lunsford, J. H., 550  
 Luss, D., 81  
 Luther, K., 575  
 Luther, P. K., 262, 267  
 Luz, Z., 472, 478  
 Luzzati, V., 181  
 Lyakhov, A. G., 40, 41  
 Lykke, K. R., 304  
 Lynden Bell, R. M., 541, 542  
  
**M**  
 Ma, M., 154  
 MacDonald, R. A., 537  
 MacElroy, R. D., 442, 447  
 Macgowan, D., 326  
 Machlup, S., 360  
 Macias, A., 277, 279, 281  
 Mackay, G. I., 587  
 Mackrodt, W. C., 537  
 MacLeod, A. M., 270  
 Macura, S., 107, 453  
 Madden, P. A., 323, 325, 333, 334, 336, 341  
 Madura, J. D., 323-25, 333, 339, 340, 526  
 Maekawa, S., 155  
 Magde, D., 380-82, 384, 385, 387-91, 402, 577  
 Magdowski, G., 263, 268  
 Maier, J. P., 289  
 Maiorou, V. N., 119  
 Makarov, K. I., 36  
 Makhayoun, M. A., 430  
 Maki, A. G., 56  
 Malley, M. M., 577  
 Malli, G. L., 408, 417, 420  
 Mandel, M., 160, 169, 170, 173  
 Mandelkow, E., 262, 268  
 Mandelkow, E. M., 262, 268  
 Mandich, M., 577  
 Mangeat, P. H., 398  
 Mankin, J. C., 371, 374  
 Mannella, C. A., 260, 266  
 Manneville, P., 372  
 Manning, G. S., 162, 171  
 Manning, L. E., 578  
 Mansfield, P., 468  
 Mansfield, R., 152, 154  
 Marcelja, S., 182, 184, 197, 203, 204, 207, 444, 472, 475  
 Marchal, E., 175  
 Marchese, F. T., 333, 338  
 Marchese, M., 441, 447  
 Marchesoni, F., 585  
 Marcott, C., 218, 226, 227  
 Marcus, R. A., 310, 316, 590, 591  
 Marek, M., 348, 357, 359, 362, 374  
 Maret, G., 182, 184  
 Margitan, J. J., 579  
 Margolis, J. S., 56  
 Margrave, J. L., 506, 520  
 Marinko, D., 374  
 Marion, D., 117  
 Marjusz, M., 354, 360, 361  
 Mark, F., 424  
 Markley, J. L., 129  
 Marks, J., 304  
 Markus, M., 356, 360, 361, 374, 375  
 Marky, L. A., 129, 131  
 Marshal, A. G., 364  
 Martin, F. H., 129  
 Martin, H., 582  
 Martin, R. L., 424, 425  
 Martina, E., 326  
 Martius, U., 244  
 Martonosi, A., 260, 266  
 Masi, S., 46  
 Mason, S. F., 221, 234  
 Massalski, A., 260, 266  
 Maasih, A. R., 182  
 Massoud, H., 567  
 Masters, A., 182, 184  
 Mateo, S., 591, 592  
 Matricardi, V. R., 244, 249  
 Matson, C. B., 586  
 Matsumura, K., 56  
 Matsuoka, O., 338  
 Matsuzaki, K., 280  
 Maudsley, A. A., 457, 458  
 Maunsbach, A. B., 260, 266  
 Mausbach, P., 340  
 Mazur, N. A., 182, 184, 197, 206, 208  
 McBride, L. J., 121  
 McCaffery, B. J., 90  
 McCammon, J. A., 328, 342, 343, 441, 447, 574, 575  
 McCaskill, J. S., 583  
 McConnell, B., 129  
 McConnell, H. M., 393-95, 398, 399  
 McConnell, J. D. C., 528  
 McCormick, W. D., 371, 374  
 McCullough, J., 374  
 McCurdy, C. W., 306, 309  
 McDiarmid, R., 302  
 McDonald, I. R., 323, 325, 333-36, 341, 439, 440, 528, 537, 538, 541-43, 545  
 McDonald, P. A., 495  
 McDowell, A. W., 249, 263, 269  
 McEwen, B. F., 261, 268  
 McGlynn, S. P., 302  
 McGregor, G., 392  
 McIntosh, J. R., 400  
 McIver, J. W., 238  
 McKellar, A. R. W., 55-58, 61, 68, 69  
 McKenzie, H. A., 433  
 McLean, A. D., 411, 414, 419, 423, 424  
 McLean, W. L., 144  
 McMahon, J. J., 568  
 McMillan, W. L., 148  
 McMorrow, D., 591  
 McMullen, W. E., 182, 184, 206  
 McMurichie, L. E., 278, 282, 419  
 McNeil, P. L., 400  
 McNeish, A., 493, 500  
 McQuillan, A. J., 563  
 McSwiggen, J. A., 399  
 MeTague, J. P., 525, 526, 543  
 Mead, C. A., 218, 281, 283-85, 287, 297, 316

- Mead, R. D., 304  
 Meek, J. T., 289, 292  
 Meerts, W. L., 56  
 Mehlkopf, A. F., 462  
 Mehrling, M., 468, 472  
 Mehrotra, P. K., 324, 328, 333, 338, 341  
 Meier, B. H., 107, 453  
 Meier, H. J., 172, 173, 176  
 Meinnel, J., 528  
 Meissner, C., 323, 325, 333  
 Melboom, S., 451, 460  
 Mello, P. A., 287  
 Melvin, A., 90  
 Mely, B., 182, 184, 193, 194, 196, 205  
 Menger, E. M., 457  
 Menger, F. M., 180, 181, 197, 206  
 Menzies, R. T., 56  
 Merer, A. J., 56, 57  
 Mersereau, R. M., 467  
 Metiu, H., 550  
 Metropolis, N. A., 528  
 Metzger, H., 399  
 Meyer, H.-D., 285, 287, 306, 307, 309, 310  
 Meyer, R., 279, 297, 500  
 Mezei, M., 324, 328, 333, 338, 341, 439, 444  
 Micha, D. A., 306  
 Michalska, D. F., 231-33, 237  
 Michel, K. H., 528, 542  
 Miescher, E., 301  
 Mikheeva, S. S., 36  
 Mikkilineni, R., 341, 446  
 Mikoshita, N., 154  
 Miller, K. R., 260, 266  
 Miller, P. S., 127, 129  
 Miller, T. A., 56, 60, 277, 284, 289, 515  
 Miller, W. H., 277, 305-7, 309, 577  
 Milligan, R. A., 261, 263, 268, 270  
 MILLIGAN, R. F., 139-58;  
 141, 142, 144, 146-48,  
 151, 155  
 Mills, R. L., 537, 538  
 Millward, G. R., 251  
 Minakata, A., 175, 176  
 Minorsky, N., 348, 349  
 Minowa, T., 58, 66, 68  
 Misev, L., 289  
 Missel, P. J., 182, 184, 197, 206, 208  
 Mitchell, D. J., 182, 184, 185, 200, 206-8, 444  
 Mitra, P., 181  
 Mittal, K. L., 179-82  
 Mizushima, S., 260, 266  
 Mochel, J. M., 148  
 Moelwyn-Hughes, E. A., 587  
 Moeri, L., 568  
 Moller, K., 374  
 Mondini, G., 88  
 Monnier, M., 498, 499  
 Monod, J., 121, 355  
 Monson, P. A., 329  
 Montague, D. C., 586  
 Montague, D. G., 527  
 Montgomery, J. S. Jr., 574, 583, 585  
 Moonen, C. T. W., 121  
 Moore, B., 576  
 Moore, C. B., 58, 69, 70, 521  
 Morales, M. F., 395  
 Moran, B., 326, 328  
 Moran, M. M. Jr., 56  
 Morawetz, H., 584  
 Morden, K. M., 129, 132  
 Moretz, R. C., 244, 249  
 Morgan, W. D., 399  
 Morgenev, B., 167  
 Mori, H., 374  
 Morigaki, K., 151, 154  
 Morikawa, K., 263, 265  
 Morita, A., 170  
 Morita, S., 154  
 Morokuma, K., 589  
 Morris, G. A., 106, 108, 453  
 Morris, G. P., 334  
 Morse, M. D., 279, 288, 297  
 Morton, H. T., 227  
 Moruzzi, V. L., 285  
 Moscowitz, A., 214, 218, 219, 226, 227  
 Moseley, A., 476  
 Moses, C. A., 31  
 Mosher, H. S., 214, 226  
 Moskovits, M., 219, 557-59, 567  
 Moskowit, J. W., 412, 436  
 Mott, N. F., 140-42, 144-47, 153, 156  
 Moule, R. J., 92  
 Moul, J., 447  
 Mountain, R. D., 536, 537  
 Moussa, F., 528  
 Movde, D. C., 58, 60  
 Mucha, J. A., 56, 57, 59  
 Mugnai, D., 305  
 Mui, K., 144  
 Mukerjee, P., 181  
 Mulder, B. M., 543  
 Muller, F., 121  
 Muller, L., 108  
 Müller, R. P., 505  
 Müller, S. C., 361, 374, 375  
 Muller-Westerhoff, U., 413  
 Mullins, D. R., 555, 556, 564, 570  
 Mullins, J. R., 78, 88, 97  
 Mullis, K., 132  
 Munowitz, M., 470  
 Munro, R. G., 536  
 Murad, S., 327  
 Murata, S., 505  
 Murayama, M., 434  
 Murdoch, J., 462, 464  
 Murdoch, J. B., 476  
 Murphy, R. D., 528  
 Murray, R. T., 243  
 Murray Lloyd, E. K., 55, 56  
 Murrell, J. N., 575, 576  
 Murthy, C. S., 323, 335, 537  
 Murto, J., 495, 498-503, 505, 521  
  
 N  
 Nachtrieb, K., 270  
 Naegeli, D. W., 31  
 Nafie, L. A., 214-16, 219, 222, 225-28, 234, 237  
 Nagai, K., 56, 57, 59  
 Nagarajan, R., 182, 184, 206, 207  
 Nagashima, T., 374  
 Nagayama, K., 107, 453, 467  
 Naghizadeh, J., 182  
 Nagle, J. F., 180, 182, 186, 187  
 Najafabadi, R., 535  
 Nakamura, H., 305  
 Nakanishi, K., 341, 342, 439  
 Nakano, H., 182  
 Nakata, M., 503  
 Nalewajski, R. F., 586  
 Narang, S. A., 121  
 Narasimhan, K. S., 35  
 Narayanan, U., 233  
 Narten, A. H., 322  
 Naudts, J., 542  
 Nauts, A., 304  
 Nee, T. W., 588  
 Neff, H., 558  
 Negus, D. K., 584  
 Nelander, B., 505  
 Nelson, D. R., 536  
 Nelson, W. J., 398  
 Nemethy, G., 444  
 Nesbitt, D. J., 58, 69, 576-78  
 Neumann, E., 160, 173, 176  
 Neusy, E., 538  
 Newman, J. B., 412  
 Newman, P. F., 155  
 Newton, M. D., 324, 574, 589-91  
 Nezbeda, I., 326  
 Nichols, A. L. III, 448  
 Nichols, H., 557  
 Nicolis, G., 77, 78, 351  
 Niederberger, W., 182, 184, 193, 194, 196  
 Nielsen, S. E., 301  
 Nikitin, E. E., 277, 305, 592  
 Ninham, B. W., 182, 184, 185, 200, 206-8, 444  
 Nishi, N., 67

## 610 AUTHOR INDEX

- Nishida, N., 151, 154  
 Nitzan, A., 584, 585  
 Noble, S. A., 121  
 Noell, J. O., 429  
 Noid, D. W., 310  
 Nomura, M., 174  
 Nonella, M., 505  
 Nordholm, S., 592  
 Northrup, S. H., 328, 574, 575  
 Nosé, S., 326, 328, 532-34,  
 536, 538, 539, 541  
 Novick, A., 355  
 Noyes, R. M., 348, 354, 357,  
 359, 365, 369, 371, 574-  
 76, 582  
 Nugent, W., 576  
  
**O**  
  
 Oboodi, M., 227, 228  
 O'Brien, M. C. M., 314  
 O'Connell, J. P., 200  
 Odijk, T., 160  
 Oettl, H., 263, 268  
 Ogilby, P. R., 58, 69, 578  
 Ohashi, N., 56, 57, 59  
 Ohno, T., 249  
 Oka, T., 57, 58, 60, 61  
 Okazaki, S., 341, 342, 439  
 O'Konski, C. T., 159, 160, 171,  
 175  
 Okumura, M., 56  
 Oliva, A., 589  
 Olmstead, W. N., 587  
 Olsen, L. F., 374  
 Olson, J. A., 306  
 Olson, W. B., 56  
 O'Neill, J. A., 69  
 Onsager, L., 161, 380, 588  
 Ootuka, Y., 144, 154-56  
 Öpik, U., 282, 285, 294, 296,  
 314  
 Oppenheim, A. V., 467  
 Oppenheimer, R., 277, 285  
 Orbach, H. S., 316  
 Orban, M., 354, 374  
 Oreg, J., 420  
 Orel, A. E., 309  
 Orida, N., 399  
 Orlova, E. V., 263, 268  
 Örtung, W. H., 175  
 Osborn, M. J., 399  
 Oscherov, V. I., 314  
 Osguthorpe, D. J., 341, 342,  
 447  
 O'Shea, S. F., 323, 325, 333,  
 336  
 Osherov, V. I., 285, 314, 316,  
 592  
 Ostroff, E. D., 468  
 Osugi, J., 592  
 Osumi, M., 263, 268  
 Otis, C. E., 290-92, 300-3  
  
 Ott, E., 374  
 Otto, A., 550, 568, 569  
 Otto, B., 575  
 Otto, H. H., 542  
 Ovchinnikov, A. A., 277, 305,  
 591  
 Ovchinnikova, M. Ya., 277,  
 305, 589, 590  
 Overend, J., 218, 219, 226, 227  
 Owenson, B., 181, 182, 185,  
 196, 201  
 Owicki, J. C., 338, 439  
 Oxley, J. H., 35  
 Oxtoby, D. W., 584, 586, 589,  
 590  
 Ozaki, Y., 541, 542, 545  
 Ozeki, H., 263, 265  
 Özkan, I., 279  
  
**P**  
  
 Paalanen, M. A., 142, 144, 145,  
 147-50, 152, 155  
 Pacault, A., 348  
 Pace, R. J., 182  
 Packer, K. J., 457  
 Paetzold, R., 589  
 Page, F. M., 355  
 Pailthorpe, B. A., 444  
 Palmer, H. B., 35, 38, 47  
 Pan, F.-S., 58, 60, 61  
 Pan, R. P., 537  
 Pandey, A., 287  
 Panfilov, V. N., 55, 70  
 Pangali, A., 442  
 Pangali, C. S., 328, 444, 445  
 Panock, R., 56  
 Papadopoulos, S., 263, 268  
 Papoušek, D., 277  
 Parce, J. W., 398  
 Pardi, A., 129, 132  
 Parent, C. R., 57  
 Parinello, M., 326, 328  
 Park, C., 42  
 Parlinski, K., 528  
 Parrinello, M., 531, 535, 537,  
 544  
 Parsonage, N. G., 526, 537, 541  
 Parsons, D. F., 244, 249, 261,  
 265  
 Paskin, A., 529  
 Patel, D. J., 121, 128, 129, 132  
 Patey, G. N., 322, 323, 325,  
 326, 329, 331-34, 341,  
 526, 538, 575  
 Patrick, C. R., 582  
 Patterson, A. Jr., 162  
 Patterson, W. L., 35  
 Pawley, G. S., 540, 541, 545  
 Payzant, J. D., 587  
 Pearce, B. M. F., 398  
 Pearson, R. G., 277  
 Pechik, V. K., 36  
  
 Pechukas, P., 287, 305, 574  
 Pecora, R., 395, 401  
 Pelissier, M., 429  
 Penfold, J., 181, 182, 184  
 Pepper, M., 153, 155  
 Perchard, J. P., 503, 505  
 Perez, R., 359  
 Perrin, H., 472  
 Perry, R. A., 56, 59  
 Perry, T., 144  
 Person, W. B., 58, 69  
 Persoons, A., 162  
 Persson, B. N. J., 569  
 Perttälä, M., 498-500  
 Petek, H., 58, 69  
 Peters, J., 380  
 Peters, K. S., 578, 589  
 Peters, R., 380, 391, 398, 400  
 Petersen, N. O., 396, 402  
 Peterson, M. R., 507  
 Petrmichl, R. H., 62, 63  
 Pettinger, B., 568  
 Pettitt, B. M., 326, 331-33,  
 335-37, 339, 340, 526  
 Pfaff, J., 58, 60  
 Pfeiffer, J., 56  
 Pfister, A. C., 35  
 Phillies, G. D., 401  
 Phillippi, M. A., 472  
 Phillips, D. H., 413, 422  
 Piacente, V., 427  
 Piantini, U., 452, 461  
 Pickett, H. M., 585  
 Pierotti, R. A., 437, 438  
 Pilcher, G., 92  
 PIMENTEL, G. C., 491-524;  
 64, 492, 504, 506, 508-11,  
 513, 514, 516-21  
 Pincaux, J. P., 535  
 Pincus, P., 483  
 Pines, A., 452, 456-59, 461,  
 462, 464, 470-72, 476  
 Pings, C. J., 322  
 Pink, D. A., 182  
 Pires, M. V., 287  
 Piro, R., 88  
 PITZER, K. S., 407-32; 408,  
 410-12, 414, 416-21, 423-  
 29  
 Piveteau, D., 127  
 Pizzala, L., 498  
 Plank, L., 401  
 Plath, P., 374  
 Plummer, G. M., 61  
 Podleski, T. R., 399  
 Poggi, Y., 182, 184  
 Pohorille, A., 442, 447  
 Poland, D. C., 184  
 Polavarapu, P. L., 215, 219,  
 222, 227, 228, 231-34, 237  
 Poliakov, M., 493, 500, 506,  
 521  
 Polian, A., 541

- Polinger, V. Z., 278  
 Pollak, M., 144, 171  
 Pollard, T. O., 262, 267  
 Pollock, C. R., 56  
 Pollock, E. L., 321, 325, 535, 545  
 Polyakova, M. M., 36, 41  
 Pomeau, Y., 372  
 Pontikis, V., 537  
 Poo, M.-m., 380, 398, 399  
 Poore, A. B., 77, 81, 86  
 Popot, J.-L., 260, 266  
 Poppe, C., 244  
 PORSCHKE, D., 159-78; 159, 161, 163-74, 176  
 Porte, G., 182, 184, 207  
 Porter, C. E., 287  
 Porter, G., 289  
 Portis, A., 398  
 Portnow, J., 77  
 Poste, G., 380, 398  
 Postma, J. P., 439, 447  
 Postman, J. P. M., 326, 328  
 Poupkov, R., 472, 483-85  
 Pourcin, J., 498, 499  
 Powell, M. F., 592  
 Praet, M. Th., 287  
 PRATT, L. R., 433-49; 181, 182, 185, 196, 201, 331, 340, 341, 437-40, 442, 444-48, 582, 586  
 Preston, R. K., 305, 309  
 Preuss, A. W., 56  
 Prigogine, I., 348, 350, 351, 354, 360  
 Pritchard, H. O., 92  
 Pryce, M. H. L., 282, 285, 294, 296, 314  
 Pshezhetsky, S. Ya., 591  
 Pulay, P., 228, 237  
 Pulford, S. M., 129  
 Purcell, E. M., 399, 460  
 Pusey, P. N., 380  
 Pustovskikh, A. I., 263, 268  
 Putnam, S., 395  
 Puyal, M., 181  
 Pyper, N. C., 414  
 Pyykko, P., 408, 411, 412, 422-25, 429, 430  
  
 Q  
 Quentrec, B., 537  
 Quinn, J. E., 324  
 Quirke, N., 326, 334  
  
 R  
 Rabalais, J. W., 289  
 Rabin, Y., 472  
 Rabinowitch, E., 575  
 Rabitz, H. A., 97  
 Racine, S., 503  
 Radermacher, M., 263, 268  
 Radford, H. E., 56, 57  
 Raeburn, C., 270  
 Rafalkes, I. S., 35, 36, 38  
 Raffanetti, R. C., 413, 422  
 Raghavachari, K., 289  
 Rahman, A., 324-26, 328, 341, 342, 441, 442, 444, 526, 528, 529, 531, 535, 537, 541, 542  
 Raley, J. H., 92  
 Ralph, E. K., 110, 129  
 Ram, J., 326  
 Ramakrishnan, T. V., 144-47, 149  
 Ramsay, D. J., 401  
 Rance, M., 109  
 Ranfagni, A., 305  
 Ranghino, G., 323, 325  
 Rankert, D., 261  
 Rannala, E., 592  
 Rao, C. N. R., 140, 142, 535  
 Rao, M., 328, 442, 444, 445  
 Rapaport, D. C., 441, 443  
 Räsänen, M., 495, 498-503, 505, 521  
 Raseev, G., 287  
 Ratner, M. A., 287  
 Ravdin, P., 399  
 Ravishanker, G., 324, 333, 338, 341, 444  
 Rawlings, D., 472  
 Ray, D., 58, 60  
 Ray, J. R., 535  
 Ray, W. H., 77, 81, 86  
 Rayner, B., 127  
 Rebentrost, F., 277, 279, 305  
 Redfield, A. G., 110, 129  
 Ree, F. H., 326  
 Reed, J., 527  
 Reedy, G. T., 413  
 Reedy, M. C., 262, 267  
 Reedy, M. K., 262, 267  
 Regel, A. R., 146  
 Rehms, P., 349, 350, 354, 360, 369, 370  
 Reichardt, C., 579, 587, 589  
 Reichenbacher, M., 589  
 REID, B. R., 105-37; 112, 114, 121, 122, 124, 126-32, 134  
 Reid, D. G., 122, 127, 132  
 Reidler, J. A., 399, 400  
 Reilly, J. P., 289, 292  
 Reimers, J. R., 325, 333, 578, 582  
 Reinhold, M., 452  
 Reisfeld, M., 58, 69  
 Reiss, H., 192  
 Reiss-Husson, F., 181  
 Reisz, P., 583  
 Remenyi, G., 153, 154  
 Rentzepis, P. M., 578  
 Reuber, E., 272  
 Reverchon, E., 88  
 Reyes, J., 564  
 Rhim, W. K., 470  
 Ribbeggard, G., 505  
 Ribeiro, N. S., 129  
 Ricci, F. P., 334, 335  
 Rice, J. A., 129  
 Rice, M. J., 57  
 Rice, S. A., 340  
 Rice, T. M., 149, 150, 155  
 Richter, H.-P., 263, 268  
 Richter, P. H., 354, 360, 399  
 Riddiford, C. L., 175  
 Riehl, R., 263, 268  
 Riera, A., 277, 279, 281  
 Riess, I., 144  
 Rigby, D., 196  
 Riggan, M., 56, 57  
 Rigler, R., 380, 395, 402  
 Riley, J., 568  
 Rill, R., 161, 163  
 Rinzel, J., 360  
 Ritchie, G., 565  
 Roberts, P. T. E., 270  
 Robertson, J. D., 261, 266  
 Robiette, A. G., 58, 60  
 Robin, M. B., 300  
 Robinson, D., 56  
 Robinson, G. W., 584  
 Robinson, J. P., 261  
 Robinson, P. J., 519, 579, 585  
 Robnik, M., 287  
 Robson, B., 341, 342  
 Rocca, D., 334, 335  
 Rogowski, R. S., 56  
 Rohrbeck, W., 56  
 Ronca, G., 185  
 Ronchetti, M., 536  
 Ronnenberg, J., 172, 173, 176  
 Roothaan, C. C. J., 421  
 Ros, P., 430  
 Rose, H., 252  
 Rosen, A., 412, 413, 430  
 Rosenbaum, T. F., 141-44, 146-49, 151, 152, 155  
 Rosenberg, M., 121  
 Rosenberg, R. O., 341, 446, 574, 583, 585, 586  
 Rosenbluth, M., 56  
 Rosenbluth, A. W., 528  
 Rosenbluth, M. N., 528  
 Rosenbusch, J. P., 260, 266  
 Rosenstein, R. A., 574  
 Rosman, H., 582  
 Ross, B. D., 585  
 Ross, J., 349, 350, 354, 360, 369, 370  
 Ross, M., 139  
 Rossi, A., 372, 374  
 ROSSKY, P. J., 321-46; 324-26, 329, 331-33, 335-37, 339-43, 441, 442, 445, 447  
 Rössler, O. E., 371, 374

- Rothenberger, G., 584  
 Rothwell, W. J., 56, 58  
 Roux, B., 175  
 Roux, J.-C., 348, 355, 371, 372, 374  
 Rowell, J. M., 151, 154  
 Rowlinson, J. S., 325  
 Roy, S., 129  
 Ruben, D. J., 108, 128  
 Ruckenstein, A. E., 149, 150, 155  
 Ruckenstein, E., 182, 184, 206, 207  
 Rudge, W. E., 537  
 Ruebush, M. J., 398  
 Ruegg, T., 515  
 Ruelle, D., 371  
 Ruff, G. A., 58, 60  
 Ruigrok, R. W. H., 261, 266  
 Ruoff, P., 357, 358  
 Russegger, P., 505  
 Russell, D. K., 55-57  
 Russell, L., 69  
 Russell, S. T., 587  
 Russo, N., 124, 127  
 Russo, S., 584  
 Rust, F. F., 92  
 Ruterjans, H., 121, 129  
 Ryckaert, J.-P., 327, 534, 541  
  
**S**  
 Sack, R. A., 282, 285, 294, 296, 314  
 Sack-Kongehl, H., 261, 267, 270  
 Saffman, P. G., 398  
 Saito, S., 56-59, 62, 63  
 Salem, L., 277, 289, 292  
 Salinger, G. L., 150  
 Salisbury, S. A., 122, 127, 132  
 Salmon, E. D., 400  
 Salnikov, I. E., 77  
 Samulski, E. T., 472, 475  
 Sanctuary, B. C., 182  
 Sanda, P. N., 565, 569  
 Sano, T., 176  
 Sarai, A., 591  
 Sarkisov, G. N., 439  
 Sarkisov, O. M., 102  
 Sarofim, A. F., 46  
 Sasaki, M., 592  
 Sasaki, W., 144, 154-56  
 Sass, J. K., 558  
 Sato, H., 67  
 Sauer, R. T., 121, 128, 129  
 Saxton, W. M., 400  
 Saxton, W. O., 245, 258, 261  
 Saykally, R. J., 55-58, 60, 69  
 Scalabrin, A., 56  
 Scanlon, K., 227  
 Sceats, M. G., 340, 577  
 Schaad, L. J., 233  
 Schaefer, D. W., 380  
 Schaefer, H. F. III, 436  
 Schäfer, E., 58, 60  
 Schäfer, L., 501  
 Scharf, B., 286, 293  
 Scharpen, L. H., 504  
 Schatz, G. C., 567  
 Scheek, R. M., 119, 121, 124, 127, 129, 133  
 Schell, M., 576  
 Schellman, J. A., 218  
 Scheraga, H. A., 184, 327, 338, 439, 441, 443, 444  
 Schiferl, D., 537, 538  
 Schiff, L. I., 251  
 Schindler, H., 380, 402  
 Schindler, M., 394, 398, 399  
 Schiski, P., 272  
 Schlegel, R., 400  
 Schlessinger, J., 380, 381, 383, 391, 395, 398-400  
 Schlessinger, M. J., 400  
 Schlodder, E., 177  
 Schlosser, D. W., 216  
 Schluter, M., 422  
 Schmeisser, D., 569  
 Schmelzer, C., 161, 162  
 Schmid, G. H., 507  
 Schmidt, J., 457, 544  
 Schmidt, M. F., 270  
 Schmit, C., 287  
 Schmitz, K. S., 401  
 Schmitz, R. A., 348, 374  
 Schneider, B., 425, 429  
 SCHNEIDER, F. W., 347-78; 347, 348, 350, 353, 354, 356, 362, 363, 365-67, 370  
 Schoenborn, B. P., 181, 182, 184  
 Schofield, P., 591  
 Schouten, J., 173  
 Schreiber, A. B., 399  
 Schreiber, I., 357, 359, 374  
 Schriver, A., 503  
 Schriver, L., 503, 505  
 Schroeder, J., 575  
 Schubert, J. E., 56  
 Schuh, H., 575  
 Schulten, K., 391  
 Schultheiss, R., 262, 268  
 Schumacher, E., 279, 297  
 Schurr, J. M., 401  
 Schuster, G. B., 578  
 Schuster, P., 348  
 Schuster, T. M., 176  
 Schwab, J. J., 59  
 Schwan, H. P., 173  
 Schwartz, I. B., 360  
 Schwarz, G., 162, 175, 176  
 Schwarz, H. A., 582  
 Schwarz, W. H. E., 418, 424, 426, 429  
 Schweiger, H.-G., 348  
 Schweizer, K. S., 592  
 Scott, H. L., 182, 201, 441, 447  
 Scott, S. K., 78, 88, 90, 91, 101  
 Sculley, M. J., 444  
 Sears, T. J., 56-58, 69, 289  
 Secrest, A. C., 35  
 Seelig, A., 181, 182, 184, 193, 196  
 Seelig, J., 175, 181, 182, 184, 193, 194, 196  
 Segal, D. M., 399  
 Segal, G. A., 231, 235-37  
 Seitz, D., 58, 69  
 Seki, S., 527  
 Sekreteta, E., 289  
 Seligman, T. H., 287  
 Selivanova, O. M., 263, 268  
 Serpersu, E., 260, 266  
 Sethna, J. P., 592  
 Setzer, D. W., 519  
 Sevcikova, H., 357, 359  
 Shafer, R. H., 132  
 Shaik, S. S., 278, 281, 286, 587  
 Shaka, A. J., 452, 461  
 Shakked, Z., 122, 127  
 Shattuck, T. W., 452  
 Shaw, D. H., 92  
 Shaw, N. K., 88, 97  
 Shaw, P. J., 256, 269  
 Sheetz, M. P., 393, 394, 396, 398, 399  
 Sheinson, R. S., 90, 97, 98  
 Sher, L. D., 173  
 Sherrington, M., 83  
 Shida, T., 127  
 Shiley, R. H., 289  
 Shiley, R. S., 289  
 Shilov, A. E., 508  
 Shimada, I., 374  
 Shimoda, K., 54, 56  
 Shing, K. S., 326  
 Shinohara, C., 263, 268  
 Shinohara, H., 67  
 Shirk, A. E., 495, 496, 498  
 Shirk, J. S., 495, 496, 498, 499  
 Shokoohi, F., 68  
 Showalter, K., 354, 365  
 Shy, J.-T., 60  
 Sibbett, W., 584  
 Siebrand, W., 277, 591  
 Sienko, M. J., 139, 142, 143  
 Silbey, R., 280, 285, 286, 293, 329, 333, 592  
 Silcocks, C. G., 38  
 Silvi, B., 503  
 Simon, B., 283, 316  
 Simoyi, R. M., 372  
 Singer, K., 323, 335, 537  
 Singer, S. J., 398  
 Singh, H. J., 92  
 Singh, R. D., 227  
 Singh, S., 326

- Sinton, S., 456-59, 461, 462, 464, 470, 476  
 Sitzmann, E., 589  
 Skell, P. S., 582  
 Skinner, J. L., 574, 583, 585, 586  
 Sköld, K., 537  
 Skriver, E., 260, 266  
 Slager, T. L., 551, 555  
 Sloane, C. S., 285, 286, 293  
 Slonczewski, J. C., 285  
 Sluckin, T. J., 360  
 Smalley, R. E., 279, 288, 297  
 Smidt, J., 462  
 Smith, A. D., 316  
 Smith, B. A., 393, 394, 399, 401  
 Smith, D. R., 55-57, 70  
 Smith, F. T., 280  
 Smith, G. W., 44  
 Smith, K. P., 493  
 Smith, L. M., 395, 398  
 Smith, M. J., 398  
 Smith, P. R., 262, 263, 267, 268  
 Smith, S. F., 343, 587  
 Smith, W. R., 326  
 Smoluchowski, M., 575  
 Snegireva, T. D., 36, 38, 41  
 Snell, G., 329, 333  
 Snijders, J. G., 412, 413, 424, 425, 429, 430  
 Snook, I. K., 528  
 Snyder, R. G., 528  
 Soderman, O., 182, 184, 193, 194, 196, 205  
 Softley, T. P., 58  
 Sontag, H., 428  
 Sorella, S., 154  
 Sorensen, O. W., 106, 109, 110, 452, 456, 461, 464  
 Sowers, A., 399  
 Spaepen, F., 526  
 Speedy, R. J., 333, 338  
 Spellmeyer, D. C., 341  
 Spencer, E. G., 151, 154  
 Spezski, J. J., 58, 60  
 Spiegelmann, F., 429  
 Sprik, M., 329, 532, 535, 542  
 Spring, C. A., 586  
 Stace, A. J., 575, 576  
 Stanley, H. E., 340  
 Stanton, A. C., 55, 65  
 Stassinopoulou, C., 112, 113, 121  
 States, D. J., 108, 128  
 Statman, D., 584  
 Staveley, L. A. K., 526, 537, 541  
 Stebbings, R. F., 290  
 Stegbahn, E. M., 429  
 Steinhart, P. J., 536  
 Steinhäuser, O., 328  
 Stell, G., 322, 323, 325, 326, 329-34  
 Stel'maschuk, V. Ya., 263, 268  
 Stellwagen, N. C., 163, 171  
 Stemple, D. L., 400  
 STEPHENS, P. J., 213-41; 214-16, 224-27, 231, 233, 235-37  
 Stepto, R. F. T., 196  
 Stevens, I. D. R., 586  
 Stevens, W. J., 415, 418, 422, 429  
 Stevenson, J. R., 216  
 Stewart, M., 262, 267  
 Stigter, D., 181  
 Stilbs, P., 182, 184, 193, 194, 196, 205  
 Stiles, P. J., 588  
 Stillinger, F. H., 184, 324, 325, 333, 338, 340, 436-38, 441, 442, 444, 447, 526, 529, 536, 541, 574  
 Stimpfle, R. M., 56, 59  
 Stockley, C. P., 472, 475, 476, 478  
 Stodolsky, L., 592  
 Stoll, M. E., 452, 472  
 Stone, J., 92  
 Stoner, E. C., 565  
 Stoylov, S. P., 176  
 Strahan, S. E., 58, 60  
 Stratt, R. M., 592  
 Strauss, H. L., 504, 528, 585  
 Strazielle, C., 181  
 Streett, W. B., 321, 323, 326, 335  
 Streitwieser, A. Jr., 413  
 Strelcyn, J. M., 374  
 Strop, P., 117  
 Stroud, R. M., 260, 264, 271  
 Strzelecki, L., 480  
 Stuchl, I., 348  
 Stwalley, W. C., 288  
 Styra, M., 399  
 Su, C. N., 233  
 Suchanova, D., 357, 359, 362, 374  
 Suck, J. B., 323  
 Suenram, R. D., 56  
 Suga, H., 527  
 Sugimoto, N., 592  
 Sullivan, D. E., 329, 333, 342, 343  
 Sun, Z., 181, 182, 196, 201  
 Sundström, V., 584, 586  
 Sussman, J., 592  
 Suter, D., 107  
 Sutton, A. P., 537  
 Swaminathan, P. K., 306  
 Swaminathan, S., 333, 338, 436, 439, 444  
 Swanson, B. I., 511  
 Swendsen, R. H., 545  
 Swenson, C. J., 323-25, 333, 336, 337, 340-42  
 Swinney, H. L., 348, 371, 372, 374  
 Swope, W. C., 327, 328, 439, 447  
 Syage, J. A., 584, 585  
 Szalay, M., 261, 267, 269  
 Szerverenyi, N. M., 483  
 Szilard, L., 355  
 Szleifer, I., 181, 182, 184, 185, 187-94, 196, 205, 206, 208  
 Szoka, F., 398  
 T  
 Tabet, E., 154  
 Tabony, J., 181, 182, 184  
 Tait, J. F., 400  
 Takens, F., 371  
 Takeuchi, H., 500  
 Tan, L. Y., 64  
 Tanaka, H., 341, 342  
 Tanaka, I., 57  
 Tanaka, K., 56, 58, 62, 587  
 Tanaka, T., 121  
 Tanford, C., 179-82, 184, 185, 187, 197, 200, 206, 207, 401, 433, 448  
 Tang, J., 457, 459, 472  
 Tani, A., 341, 438-40, 442, 444  
 Tank, D. W., 399  
 Tanzawa, T., 47  
 Tapia, O., 592  
 Tartar, H. V., 207  
 Tasumi, M., 500, 503  
 Tatsumi, K., 412  
 Taugro, J. D., 399  
 Taylor, D. L., 386, 394, 400  
 Taylor, J. R., 584  
 Taylor, K. A., 249, 260-62, 266, 267, 270  
 Taylor, R. L., 35  
 Taylor, T. W., 354, 360  
 Teichtell, C., 429  
 Teller, A. H., 528  
 Teller, E., 280, 282, 528  
 Tembe, B. L., 589  
 Temps, F., 56, 59  
 Terao, T., 455, 457  
 Termonia, Y., 354, 360  
 Tesner, P. A., 35, 36, 38, 40, 41, 47  
 Teubner, M., 161  
 Tews, K. H., 380  
 Thaler, Th., 261, 266  
 Thirumalai, D., 535, 545, 592  
 Thirunamachandran, T., 225  
 Thislewaite, P. J., 584  
 THOMAS, G. A., 139-58; 141-52, 154-56, 243  
 Thomas, G. W., 540

- Thomas, J. M., 251  
 Thompson, D., 90  
 Thompson, G. A., 285  
 Thompson, J. E., 396  
 Thompson, J. M. T., 78  
 Thompson, N. L., 394  
 Thompson, R. C., 354  
 Thompson, S. M., 342, 343  
 Thompson, T. C., 281, 284, 285, 287, 297  
 Thorson, W. R., 306  
 Thouless, D., 283, 316  
 Thrush, B. A., 56-59, 64, 65  
 Tiger, R. P., 579, 587  
 Tikochinsky, Y., 189, 190  
 Tildesley, D., 326  
 Tinley, L. G., 262, 267  
 Tinoco, I., 129, 132  
 Tinoco, I. Jr., 168, 174  
 Tischler, F., 285  
 Tishby, N. Z., 189, 190  
 Tiszauer, D., 306  
 Tittel, F. K., 56, 69  
 Titus, J. A., 399  
 Tivol, W. F., 249, 261, 265  
 Todd, T. R., 56  
 Todorov, G., 176  
 Tolliver, D. E., 58, 60  
 Tomita, K., 349-54, 360, 369, 371  
 Torrell, L. M., 543  
 Torrez-Mujica, T., 88, 97  
 Torrie, G. M., 325-27, 576  
 Toth, R. A., 56  
 Touhara, H., 341, 342, 439  
 Toyonaga, B., 507  
 Trakhtenberg, L. I., 591  
 Trandaburu, T., 263, 268  
 Tranqui, L., 262, 268  
 Tranquille, M., 500  
 Tribus, M., 189, 190  
 Troe, J., 574, 575, 579  
 True, N. S., 586  
 Truhlar, D. G., 277, 279, 283-85, 287, 297, 316, 415-17, 419, 420, 574, 578, 582, 590, 591  
 Tsang, J. C., 565  
 Tse, J. S., 439, 541  
 Ts'o, P. O. P., 127  
 Tsuboi, M., 503  
 Tsuji, K., 176  
 Tucker, E. E., 445  
 Tully, J. C., 277, 279, 305, 309, 574, 581  
 Tunstall, D. P., 140, 142  
 Turnbull, D., 526  
 Turner, D. L., 110, 129, 476  
 Turner, J. J., 493, 500, 506, 521  
 Turner, J. N., 249  
 Turner, J. S., 371, 374  
 Turro, N. J., 575  
 Turunen, K., 498, 499  
 Tyndall, G. S., 58, 64, 65  
 Tyson, J. J., 77, 78
- U
- Ueba, H., 569, 592  
 Ueda, A., 528  
 Ueda, K., 174  
 Uehara, H., 56, 57, 59  
 Uesugi, S., 127  
 Ulmius, J., 181  
 Ulrich, E. L., 129  
 Ungemach, S. R., 436  
 Unwin, P. N. T., 244, 245, 248, 256, 260, 261, 263-66, 268, 270  
 Uppal, A., 77, 81, 86  
 Urban, W., 56  
 Ushakov, V. G., 314, 316  
 Uyeda, N., 263, 265  
 Uzer, T., 316
- V
- Vainshtein, B. K., 254  
 Valentini, J. J., 575  
 Vallauri, R., 334, 335  
 Valteau, J. P., 325-27  
 Van Alsenoy, C., 501  
 van Boom, J. H., 121, 124, 127, 129, 131  
 Van Bruggen, E. F. J., 270  
 Van den Enden, L., 501  
 Van den Heuvel, F. C., 56, 58  
 van der Marel, G. A., 127, 131  
 van der Ploeg, P., 182, 193, 194, 199-201  
 van der Touw, F., 169  
 van der Zwan, G., 581, 588-90, 592  
 van Dijk, W., 169  
 Van Duyn, R. P., 563  
 Van Dyke, D., 251  
 van Gunsteren, W. F., 133, 326, 328  
 van Heel, M., 258  
 van Holde, K. F., 161, 163  
 Van Leuven, P., 279  
 Van Loan, C. F., 304  
 Van Megen, W., 528  
 Van Noort, H. M., 544  
 Van Rapenbusch, R., 260, 266  
 Van Roosbroeck, W., 35  
 Vamin, V. P., 37  
 Vashista, P., 537  
 Vasiliev, V. D., 263, 268  
 Vasseur, J. J., 127  
 Vastola, F. J., 40  
 Vasu, T., 333, 338  
 Vasudev, R., 68  
 Vaughan, R. W., 452  
 Vaughan, W. E., 92  
 Vaughn, C., 289  
 Vaz, W. L. C., 400  
 Vaz Pires, M., 287  
 Veatch, W., 398  
 Vedenev, V. I., 102  
 Vega, A. J., 452  
 Vega, S., 452, 456, 457, 472, 482  
 Velsko, S. P., 574, 584  
 Venitozzi, C., 46  
 Verbaarschot, J. J. M., 287  
 Verlaque, P., 498, 499  
 Verlet, L., 580, 581  
 Vermesse, J., 536  
 Verschoor, A., 263, 268  
 Verwey, C., 261, 266  
 Vesseth, L., 56  
 Vibert, P., 262, 267  
 Vidal, C., 348, 372, 374  
 Vidrine, D. W., 215  
 Viegel, N. D., 35  
 Vigers, G., 262  
 Vikingstad, E., 181  
 Viswanathan, K. S., 289  
 Vitek, V., 537  
 Vitenberg, R., 293  
 Vitt, A. A., 84, 100  
 Vnukov, S. P., 37  
 Vold, R. L., 460, 461, 472, 483, 484, 486  
 Vold, R. R., 461, 472, 483, 484, 486  
 Volger, M., 285  
 Volino, F., 472  
 von Engel, A., 62  
 von Hippel, P. H., 399  
 von Molnar, S., 153, 154  
 von Niessen, W., 281, 286, 312  
 Voronin, A. I., 314, 316
- W
- Wada, A., 174  
 Wade, R. H., 261, 262, 266, 268  
 Wade, W. R., 56  
 Wadt, W. R., 412, 413, 422, 423, 425, 430  
 Wagenknecht, T., 263, 268  
 Waggoner, A., 394  
 Wagn, Y.-L., 400  
 Wagner, G., 109, 112, 113, 117, 118, 121, 134, 464  
 Wagner, H. G., 42, 45, 46, 47, 49, 59  
 Wahl, A. C., 421  
 Wake, G. C., 84  
 Walch, P. F., 412  
 Waldeck, D. H., 584  
 Walder, R., 62  
 Walderhaug, H., 182, 184, 193, 194, 196, 205



- Walker, J. R., 537  
 Walker, P. L., 40  
 Wallace, D. J., 545  
 Wallach, D. F. H., 396  
 Walnut, T. H., 222  
 Walstedt, R. E., 155  
 Walters, J. A. L. I., 129  
 Walther, H., 515  
 Wan, Y.-H., 100  
 Wang, D.-S., 567  
 Wang, J., 506, 520  
 Wang, S. W., 429  
 Ward, B., 289  
 Ware, B. R., 380, 383, 385,  
 386, 393, 400, 401  
 Ware, D., 468  
 Warlamont, J. M., 565  
 Warner, H. E., 62, 63  
 Warren, W. S., 456, 461, 462,  
 464, 470, 471  
 Warrick, P., 592  
 Warshel, A., 587, 590-92  
 Washburn, S., 153, 154  
 Watanabe, H., 170, 175  
 Watanabe, N., 341, 342  
 Watanabe, T., 568  
 Watson, J. D., 121  
 Watson, J. K. G., 58, 61, 63,  
 285  
 Watson, R. T., 579  
 Watts, R. O., 325, 333, 526,  
 528  
 Waugh, J. S., 452, 468, 470  
 Wayne, F. D., 56, 57  
 Weaver, M. J., 590  
 Webb, R. A., 153, 154  
 Webb, W. W., 380-85, 391,  
 395, 398, 399, 402  
 Weber, P. L., 114, 121  
 Weber, R., 428  
 Weber, T. A., 333, 340, 536,  
 541  
 Webman, I., 146  
 Wechscl-Trakowski, E., 429  
 Weeding, T., 472  
 Weeks, J. D., 185  
 Wegmann, K., 374  
 Wegner, W. A., 395  
 Wehrer, A., 40, 41, 48  
 Wehrer, P., 40, 41, 48  
 Wehrli, E., 261, 266  
 WEINER, A. M., 31-52; 42  
 Weis, J. J., 331, 333, 526, 536-  
 38  
 Weis, R. M., 394, 395, 399  
 Weiss, H., 260, 266  
 Weiss, K., 261, 267, 270  
 Weiss, M. A., 121, 128, 129  
 Weiss, R. M., 592  
 Weissman, M., 380, 402  
 Weissman, M. B., 380  
 Weitekamp, D. P., 451, 456-58,  
 461-64, 470, 472  
 Weitz, E., 512  
 Wells, B., 261, 269  
 Wells, J. S., 56  
 Wells, R. D., 121, 129, 161,  
 163, 165, 167, 169, 170  
 WEMMER, D. E., 105-37; 112,  
 114, 116, 121, 124, 126-  
 31, 457-59, 462, 464, 472  
 Wennerstrom, H., 179-82, 184  
 Wertheim, M. S., 321, 325  
 Westerink, H. P., 127  
 Westler, W. M., 129  
 Weston, R. E. Jr., 70, 582  
 Wey, C.-L., 396  
 Weyl, R., 270  
 WHETTEN, R. L., 277-320;  
 283, 284, 290-93, 295,  
 296, 300-3  
 White, S. R., 578  
 Whittington, S. G., 325-27  
 Wider, G., 107, 110, 113, 117-  
 19  
 Widom, B., 185  
 Wiersema, R. J., 472  
 Wiesenfeld, J. R., 303  
 Wilczek, F., 283, 316  
 Wildman, T. A., 591  
 Wilkinson, J. P. T., 59  
 Williams, D. H., 122, 127, 132  
 Williams, F. W., 90, 92, 97, 98  
 Williams, R. D., 314  
 Williamson, M. P., 117  
 Wilson, A. G., 78  
 Wilson, A. T., 348  
 Wilson, K. G., 545  
 Wilson, K. R., 576-78, 582  
 Wilson, M. A., 448  
 Wilson, W. G., 289  
 Winer, A. M., 64  
 Winfree, A. T., 357, 359, 360  
 Wing, W. H., 58, 60  
 Winnik, M. A., 196  
 Winter, N. W., 418, 419  
 Wirmiter, B., 544  
 Wissbrun, K. F., 162  
 Witnauer, L. P., 176  
 Witt, H. T., 177  
 Wittig, C., 68  
 Wojcieszyn, J., 396, 400  
 Wojcik, M., 326, 334, 335  
 Wokaun, A., 456-58, 460, 461,  
 472  
 Wolf, A., 372  
 Wolf, D. E., 396  
 Wolf, M. L., 537  
 Wolff, E. K., 472  
 Wolynes, P. G., 329, 574, 583,  
 586-90, 592  
 Wong, M., 56, 58  
 Wong, S. S. M., 287  
 Woo, J. W. F., 360  
 Wood, C. F., 69, 70  
 Wood, J. H., 412  
 Wood, W. W., 525  
 Woods, M., 200  
 Woods, R. C., 60, 62, 63  
 Wright, J. M., 122  
 Wu, E.-S., 380, 398-400  
 Wu, S. M., 582  
 Wulf, A., 184, 185  
 Wüthrich, K., 107, 109-13, 117-  
 19, 121, 132-34, 467  
 Wyatt, R. E., 304, 586  
 Wynne, J. J., 302  
 Y  
 Yamada, C., 56-59, 62, 65-  
 69  
 Yamagishi, H., 263, 265  
 Yamaguchi, M., 151, 154  
 Yamamoto, T., 574  
 Yamaoka, K., 168, 174  
 Yanagihara, N., 568  
 Yang, C. H., 101, 102  
 Yang, C. Y., 412  
 Yarden, Y., 399  
 Yashonath, S., 535  
 Yasunga, T., 176  
 Yen, Y. S., 462, 469, 470  
 Yip, S., 535, 537  
 Yiv, S., 181  
 Yomosa, S., 592  
 Yorke, J., 374  
 Yoshimine, M., 324, 338  
 Yoshioka, K., 161, 174, 175  
 Yoshizumi, S., 154  
 Young, C. Y., 182, 184, 197,  
 206, 208  
 Young, L., 521  
 Z  
 Zaccai, G., 181, 182, 184  
 Zagysanski, Y., 380, 398  
 Zahniser, M. S., 56, 65  
 Zakharov, A. E., 41  
 Zana, R., 181  
 Zarbock, J., 110  
 Zare, R. N., 68  
 Zaslavsky, M., 359  
 Zavortink, M., 400  
 Zawadzki, A. G., 584, 585,  
 590, 592  
 Zax, D. B., 476  
 Zee, A., 283, 316  
 Zeidler, E., 252, 261, 264, 267,  
 270  
 Zel'dovich, Ya. B., 77  
 Zemb, T., 181, 182, 184  
 Zemlin, F., 261, 264, 272  
 Zerbst, H., 270  
 Zero, K., 385, 401  
 Zewail, A. H., 584, 585

# 616 AUTHOR INDEX

- |                               |                              |                                |
|-------------------------------|------------------------------|--------------------------------|
| Zeyen, C. M. E., 528          | Ziman, J. M., 144            | Zughul, M. B., 70              |
| Zgierski, M. Z., 277, 591     | Zimmermann, E. C., 350, 354, | Zuiderweg, E. R. P., 109, 118, |
| Zhabotinsky, A. M., 348, 357, | 360, 370                     | 119, 121, 129, 133, 464        |
| 362                           | Zimmermann, H., 472, 478,    | Zulauf, M., 184                |
| Zhivkov, A., 176              | 591, 592                     | Zülicke, L., 277, 305          |
| Zichi, D. A., 442             | Zimmermann, U., 173          | Zur, Y., 456                   |
| Ziegler, L. D., 277           | Zinth, W., 515               | Zusman, L. D., 589             |
| Ziegler, T., 424, 425         | Zirnbauer, M. R., 287        | Zwanzig, R. W., 588            |
| Zierold, K., 263, 268         | Zuckerman, M. J., 182        | Zysin, Y. A., 77               |

# SUBJECT INDEX

## A

- Absorbance photobleaching
  - recovery
  - rod outer segments and, 380
- Acetone
  - 1,1-difluorocyclohexane inversion in, 588
- Acetonitrile
  - structural properties of, 338
- Acetylcholine receptor
  - electron crystallography and, 266
  - fluorescence photobleaching recovery and, 399
- Acetylene
  - carbon formation from, 38-40
  - deuterated
  - spectroscopy of, 12
  - solid
    - computer simulation of, 538
    - soot formation and, 46-47
    - ultraviolet spectrum of, 7
- Acetylene molecules
  - molecular symmetry in, 515-17
- Actin
  - electron crystallography and, 267
  - translational diffusion of myosin and, 401-2
- Actinides
  - cyclooctatetre and, 413
  - relativistic effects in, 412
- Actinocene compounds, 413
- Adenosine diphosphate
  - chemical oscillation and, 360
- Adiabatic approximation
  - molecular bound states and, 279
- Alanine
  - vibrational circular dichroism of, 228, 234
- Alanine dipeptide
  - solvation structure of, 342
- Alcohols
  - oxygen atom in
  - potential parameters of, 325
  - pair-pair potentials in, 324
  - solvation and, 341
  - structural properties of, 333
- Alkali cyanides
  - molecular dynamics simulations of, 541-42
- Alkali metals
  - atomic dipole polarizabilities for, 420
  - upper energy band of, 140
- Alkane *n*-hexane-*d*<sub>6</sub>
  - proton multiple quantum studies of, 473-76
- Alkanes
  - proton multiple quantum studies of, 472-76
  - solvation of, 442
- Alkenes
  - reactions with molecular fluorine, 506
- p*-Alkoxybenzylidene-*p*-alkylanilines
  - aliphatic end chains of
  - conformation of, 478-82
- 4-cyano-4'-*n*-Alkylbiphenyls
  - molecular structure and ordering in, 476-78
- Allene
  - reactions with molecular fluorine, 506
- Allyl alcohol
  - rotational isomerization of, 502-3
- Amide nitrogen
  - oxygen atom in
  - potential parameters of, 325
- Amides
  - pair-pair potentials in, 324
  - secondary structure of, 116-17
  - solvation and, 341-42
  - structural properties of, 333, 336-37
- Amino acids
  - coupling patterns of, 111
  - protons in
  - indirect coupling of, 109
- 2-Aminoethanol
  - rotational isomerization of, 500-2
- Ammonia
  - solid
    - molecular dynamics simulations of, 541
- Ammonium halides
  - molecular dynamics simulations of, 541-42
- Amphiphilic aggregates
  - bond order parameters in, 184
  - chain conformations of, 189-92
  - chain ordering in, 192-99
  - chain packing constraints in, 186-89
  - curvature dependence in, 192-99
  - hydrophobic core of, 184-86
  - hydrophobic interactions of, 206-7
  - interaction potentials in, 183-86
  - lattice-model theory and, 204-5
  - molecular dynamics simulations of, 200-1
  - Monte Carlo simulations of, 200-2
  - qualitative models of, 206-8
  - single-chain theories and, 202-6
- Amphiphilic molecules
  - chain packing in, 179-208
- Amphiphilic surfactant
  - water-hydrocarbon liquid solution interface and, 448
- Amplitude contrast
  - electron crystallography and, 252-53
- Angular momentum coupling, 427
- Antibiotics
  - nucleic acid helix opening rates and, 129
- Aperture contrast
  - electron crystallography and, 253-54
- Aqueous solutions
  - hydrophobic interactions in, 443-46
  - proton resonances in, 464
  - solubility in, 434-35
- Argon
  - liquid
    - atom transfers in, 581-82
- Argon clathrate hydrate
  - hydration structure of, 440
- Argon-water interaction
  - minimum energy configuration of, 436
- Aromatic hydrocarbons
  - polycyclic
    - soot formation and, 46
- Atomic polar tensor model
  - circular dichroism and, 219, 234
- Atomic systems
  - computer simulation of, 535-37
- Atom transfer reactions, 580-83
- ATPase
  - electron crystallography and, 266
- Autocatalysis
  - chemical
    - thermal feedback and, 101
- Autoionization
  - radiationless decay and, 302-3

## B

- Bacterial flagellae
  - orientation of
    - dipoles and, 174-75
- Bacteriophage  $\phi$ CbK
  - electron crystallography and, 268
- Bacteriophage  $\lambda$  repressor
  - DNA-binding domain of
    - crystal structure of, 119
- Bacteriophages
  - electron crystallography and, 244
- Bacteriophage T4
  - electron crystallography and, 264
- Bacteriorhodopsin
  - electron crystallography and, 244, 264
  - protolytic equilibrium of
    - electric fields and, 176
- Balmer spectrum, 3
- Beer's law
  - circular dichroism and, 216
- Belousov-Zhabotinsky reaction, 348
  - control intermediate in, 358
  - Oregonator and, 354
  - periodic perturbations and, 362-70
  - phase resetting and, 357
  - phase response curves and, 359-60
  - quasiperiodicity in, 367
- Benzene
  - absorption double quantum
    - projection of, 470
  - aqueous solutions of
    - osmotic second virial coefficient and, 445
  - carbon formation from, 41
  - $j = 3/2$  splittings in, 284
  - nonadiabatic bound states in, 291-92
  - Raman scattering and, 556
  - Rydberg spectrum of, 302
  - Rydberg states of, 303
  - vibronic coupling in, 292-93
- Benzene- $d_6$ 
  - Raman spectra of, 558-59
- Bimolecular reactions
  - infrared induced photochemistry and, 506-21
- Biological macromolecules
  - electron crystallography and, 243-72
- Biological oscillators
  - entrainment of, 348-49
- Biopolymers
  - aqueous solutions of
    - proton resonances in, 464
    - electric fields and, 159-77

- electron crystallography and, 244
- ion polarization in
  - electric fields and, 166-70
- ligand dissociation from
  - electric field-induced, 165-66
- ligands binding to, 159
- nuclear magnetic resonance
  - and, 106
- nuclear Overhauser effects
  - and, 108
- Birge-Sponer extrapolation, 4
- Bismuth
  - orbital energies for, 410
- Boissonade-DeKemper model
  - chemical oscillation and, 354
- Bond dipole model
  - circular dichroism and, 219, 233
- Born-Huang correction, 312
- Born-Huang series, 281
- Born-Oppenheimer approximation
  - circular dichroism and, 217-18, 222-25
  - molecular dynamics and, 277
- Boron
  - molecular
    - structure of, 17
- Bose statistics, 4
- Breit-Pauli operator, 425
- Briggs-Rauscher reaction
  - biability of, 362
  - periodic perturbations and, 361
  - phase resetting and, 357
  - phase response curves and, 357
- Bromide ion
  - Belousov-Zhabotinsky reaction
    - and, 358
- 2-Bromoethanol
  - rotational isomerization of, 500
- Brusselator model
  - chemical oscillation and, 350-51, 354
- Butane
  - conformational equilibria in, 340-41
  - molecular dynamics simulations of, 540
  - structural properties of, 333
- n*-Butane
  - hydration structures of, 442
- n*-Butane-water interactions
  - Monte Carlo simulation of, 446
- t*-Butanol
  - solvation structure of, 342

## C

- Carbenes
  - laser magnetic resonance spectra of, 69
- Carbohydrates
  - nuclear Overhauser effects
    - and, 110
- Carbon
  - formation from acetylene, 38-40
  - formation from methane, 35-37
- Carbon black
  - methane decomposition on, 36-37
- Carbon monoxide oxidation
  - chemiluminescence and, 90
- Carbon tetrachloride
  - solid
    - computer simulation of, 538
- Carbon tetrafluoride
  - solid
    - computer simulation of, 538-40
- Carbonyl compounds
  - laser photolysis of, 70
- Carbonyl oxygen
  - oxygen atom in
    - potential parameters of, 325
- Catalase
  - electron crystallography and, 264
- Cayley-Klein parameters
  - polar molecular liquids and, 327
- Cell membrane proteins
  - electron crystallography and, 265
  - lateral mobility of, 398-99
  - rate of diffusion of, 398
- Cell surfaces
  - fluorescence photobleaching
    - recovery and, 398-400
- Cesium
  - atomic dipole polarizabilities
    - for, 420
- Chaos
  - chemical oscillation and, 371-74
- Charge flow model
  - circular dichroism and, 219
- Charge transfers
  - isomerizations and, 586-90
- Chemical bonding
  - spin-orbit coupling and, 425-30
- Chemical oscillators, 347-76
  - Brusselator model and, 350-51
  - entrainment and, 349-50
  - Fourier transformation and, 353

- models for, 354-55  
 nonisothermal, 370  
 periodic forcing of, 360-71  
   chaotic response and, 371-74  
   phase diagrams and, 351  
   resonance and, 349-50  
   single-pulse stimulation of, 357-60  
   stroboscopic method and, 352-53  
 Chemical reaction dynamics, 573-93  
 Chemiluminescence, 90  
 Chiral molecules  
   differential scattering by, 214  
 Chlorine gas  
   flash photolysis of  
     diode laser spectroscopy and, 64  
 2-Chloroallyl alcohol  
   rotational isomerization of, 503-4  
 2-Chloroethanol  
   rotational isomerization of, 498-500  
 Chloroform-*d*  
   nuclear relaxation in, 483-86  
 Circular dichroism  
   see Vibrational circular dichroism  
 Clathrate hydrates  
   hydration structures of, 440-41  
 Claussius-Mosotti expression, 150  
 Clebsch-Gordan coefficients, 416, 420  
 Coherence transfer echo filtering  
   multiple quantum orders and, 462-63  
 Coherent inelastic neutron scattering  
   Van Hove function and, 529  
 Collagen  
   orientation of  
     dipoles and, 174-75  
 Collisions  
   nonadiabatic processes in, 308-9  
 Comets  
   spectra of  
     diatomic, 24  
     4050 group in, 17-18  
 Composition B  
   chemical oscillation and, 361-62  
 Computer processing  
   electron crystallography and, 249-50  
 Computer simulation  
   atomic systems and, 535-37  
   interaction site model and, 325-26  
   molecular systems and, 537-45  
   polar molecular liquids and, 326-29  
   solids and, 525-45  
 Condensed matter  
   metallic behavior of, 139  
 Conductivity  
   Boltzmann, 146  
   electric fields and, 144  
   magnetic fields and, 144, 147, 152-53  
   metal-insulator transition and, 142-47  
   metallic  
     minimum, 146-47  
     stress and, 151-52  
 Conservation equations  
   stationary-state solutions to, 78-80  
 Continuous stirred-tank reactor  
   adiabatic  
     DTBP decomposition in, 92-93, 99  
   autocatalytic nucleic acid replication and, 348  
   chemical oscillation and, 347, 355-56  
   mass and energy conservation in, 91-92  
   nonadiabatic, 78-79  
   DTBP decomposition in, 92-93  
   extinction in, 84  
   flow rate in, 82  
   ignition in, 83-84  
   oscillatory reaction in, 100-1  
   oscillatory reactions and, 348  
   reactant supply and flow control in, 88-90  
   singularities in, 87  
 Cool flame phenomenon  
   chemiluminescence and, 90  
 Copper  
   electron affinities of, 411  
 Correlated Spectroscopy (COSY), 107-31  
 Coulomb interactions  
   metal-insulator transitions and, 154-56  
 Coupled oscillator model  
   circular dichroism and, 219-21, 233-34  
 Cowan-Griffin atomic procedure, 424  
 Cowan-Griffin Hamiltonian, 429  
 Crotoxin  
   electron crystallography and, 258, 264  
 Cyanoacetylene-*d*  
   nuclear relaxation in, 483-86  
 Cyclobutadiene  
   electronic degeneracy in, 289  
   isomerization rates for, 586  
 Cyclobutane  
   vibrational circular dichroism of, 228  
 Cyclohexane  
   chair-chair inversion in solvents, 583-84  
   *j* = 3/2 splittings in, 284  
 Cyclohexanone  
   vibrational circular dichroism of, 227  
 Cyclooctatetraene  
   electronic degeneracy in, 289  
 Cyclooctatene  
   actinides and, 413  
 Cyclopentadienyl radical  
   electronic degeneracy in, 289  
 Cyclopropane  
   vibrational circular dichroism of, 234  
 Cytochrome b5  
   electron crystallography and, 251  
 Cytochrome oxidase  
   electron crystallography and, 266  
 Cytochrome reductase  
   electron crystallography and, 266  
 Cytoplasm  
   fluorescence photobleaching recovery and, 400  
 D  
 Debye-Hückel theory, 332  
 Deuterium  
   fractionation in space, 63  
 Diacetylene  
   carbon formation from, 41  
   soot formation and, 47-48  
 Diamond  
   insulator properties of, 140  
 Diatomic molecules  
   computer simulation of, 537-38  
   dissociation energies of, 411  
   forbidden transitions in, 9, 23-24  
   laser magnetic resonance and, 59  
   spin-orbit coupling in, 429  
   symmetry properties of, 420-21  
 Diazomethane  
   flash photolysis of, 25  
 Dichloroethane  
   conformational equilibria in, 340-41

- 1,2-Dichloroethane  
structural properties of, 333
- Dideuteriocyclobutane  
vibrational circular dichroism  
of, 228, 235-37
- Dideuteriocyclopropane  
vibrational circular dichroism  
of, 235-36
- Dideuteroethylene  
isomers of  
molecular symmetry in,  
513-15
- Diesel engines  
soot formation in, 44
- 1,1-Difluorocyclohexane  
inversion in acetone and  
methylcyclohexane, 588
- 1,2-Difluoroethane  
rotational isomerization of,  
493-95
- 2,3-Difluoropropene  
rotational isomerization of,  
504-5
- 1,2-Dihaloethane  
in polar solvents, 588
- Dihydrodibenzo,phenanthrene  
circular dichroism of, 233-34
- Dimethyltartrate  
vibrational circular dichroism  
of, 233
- Diode laser spectroscopy  
flash photolysis of chlorine  
gas and, 64  
molecular ions and, 60-61  
photofragment detection and,  
66
- Diphenyl butadiene  
isomerization rates for, 584
- Dipolar couplings  
in crystals, 472  
in ordered alkanes, 472-74
- Dirac equation  
electron spin and, 407-8
- Dirac-Fock approximation, 415
- Dirac-Fock equations, 416
- Dirac Hamiltonian, 415-18, 424-25
- Dirac spinors, 415, 420
- Discharge plasma  
infrared spectroscopy of ions  
and, 60-63
- Ditertiary butyl peroxide decomposition, 78, 92-101  
adiabatic, 92-93  
flow system used in, 89  
kinetic parameters of, 92  
nonadiabatic, 93  
oscillatory reaction modes in,  
100-1  
oxygen and, 97-98  
reactant temperature during,  
94-95  
reaction modes during, 96-97
- stationary-state behavior in,  
98-100  
thermochemical parameters of,  
92
- DNA  
alternate solution structures of,  
131-32  
deoxynucleosides of, 122  
ethidium bromide binding to,  
384-86  
helices of  
dipole moments induced in,  
172  
hydrated  
fiber diffraction structure  
of, 122  
DNA base pairs  
B-form conformation of,  
123  
DNA fragments  
orientation of  
exponential description of,  
167-68  
DNA sequences  
nuclear magnetic resonance  
and, 121-22  
Dynamical Hellman-Feynman  
theorem, 306  
Dynamical vibration-electronic  
coupling, 306  
Dynamic polarization model  
circular dichroism and, 221,  
234
- E
- Effective core potential  
approximation, 414
- Ehrenfest equations, 306
- Eikonal method, 306
- Electrical discharge  
transient species produced by,  
55-59
- Electric fields  
biopolymers and, 159-77  
conductivity and, 144  
electrolyte dissociation and,  
161-62  
ion polarization in biopolymers  
and, 166-70  
ligand dissociation from  
biopolymers and, 165-66  
nucleic acid conformation and,  
170-74  
nucleic acid orientation and,  
163-65  
polypeptide conformation and,  
175-76  
polypeptide orientation and,  
174-75  
protein orientation and, 174-75
- Electrolytes  
dissociation of  
electric fields and, 161-62
- Electromagnetic fields  
Raman scattering and, 551-54
- Electron crystallography, 243-72  
computer processing in, 249-50  
data interpretation in, 250-54  
electron microscope in, 246-47  
instrumentation in, 269-71  
method of, 246-58  
microdensitometry and, 249-50  
phase determination in, 254-55  
projection theorem in, 254-55  
resolution in, 256-58, 272  
specimen preparation in, 248-49, 268-69  
three-dimensional reconstruction  
in, 256  
two-dimensional restoration  
in, 255-56
- Electron energy loss spectroscopy, 557
- Electronic degeneracy  
nonadiabaticity and, 280-81  
symmetry-induced two-fold,  
281  
vibronic states and, 288-90
- Electronic optical activity  
dynamic polarization model  
for, 221
- Electronic states  
adiabatic, 281  
diabatic, 280
- Electron microscope  
electron crystallography and,  
246-47
- Electrons  
Larmor radius of, 61
- Electron spin resonance  
insulators and, 155
- Electrooptic modulators  
circular dichroism and, 214
- Ensemble averaging  
multiple quantum experiments  
and, 463-64
- Enthalpy of solution, 434
- Entrainment  
chemical oscillation and, 349-50
- Entropy of solution, 434
- Erythrocytes  
cell surface-cytoskeletal interactions in, 398-99
- Ethane  
carbon formation from, 40  
C-C single-bond distance in,  
16

- Ethanol  
   structural properties of, 336-37  
 Ethidium bromide  
   binding to DNA, 384-86  
 Ethylene  
   reactions with molecular fluorine, 506-12  
 Ethylene glycol  
   rotational isomerization of, 500-1  
 Euler's equations  
   polar molecular liquids and, 327  
 Extinction phenomenon  
   thermokinetic interactions and, 80-84  
**F**  
 Feigenbaum sequences, 350  
 Fermi statistics, 4  
 Ferredoxins  
   nuclear magnetic resonance and, 121  
 Fibrin  
   electron crystallography and, 268  
 Filamentous proteins  
   electron crystallography and, 267-68  
 Fixed partial charge model  
   circular dichroism and, 218, 226-33  
 Flames  
   see Premixed flames  
 Flash photolysis, 24-25  
   chlorine gas  
     diode laser spectroscopy and, 64  
     electronic spectroscopy and, 53  
     fluorescence photobleaching recovery and, 380  
 Flavodoxin  
   nuclear magnetic resonance and, 121  
 Flow tubes  
   soot formation and, 34-41  
 Fluorescence  
   laser-induced, 53-54  
 Fluorescence correlation spectroscopy, 379-403  
   applications of, 401-2  
   examples of, 384-90  
   excitation profiles in, 391  
   rotational motion and, 394-95  
   theory of, 381-82  
   total internal reflection and, 394  
 Fluorescence photobleaching recovery, 379-403  
   applications of, 397-401  
   examples of, 384-90  
   excitation profiles in, 391-92  
   experimental approaches in, 390-95  
   limiting cases in, 384  
   models of, 383  
   theory of, 381-82  
   total internal reflection and, 394  
 Fluorine  
   molecular  
     reactions with alkenes, 506  
 2-Fluoroethanol  
   rotational isomerization of, 498-500  
 2-Fluoroethylamine  
   rotational isomerization of, 502  
 Fluorophore bleaching reactions  
   photochemistry of, 396  
 Fluorophores  
   photobleaching and, 386-87  
   photochemical destruction of, 396  
 Forbidden transitions  
   in diatomic molecules, 9, 23-24  
   in formaldehyde, 11  
 Formaldehyde  
   fluorescence spectrum of, 11  
   forbidden transitions in, 11  
   laser photolysis of, 70  
   ultraviolet spectrum of, 7  
 Formamide  
   structural properties of, 336-37  
 Fourier spectra  
   of Belousov-Zhabotinsky oscillator, 363-69  
 Fourier transformation  
   chemical oscillation and, 353  
   circular dichroism and, 215  
   multiple quantum orders and, 460-61  
 Franck-Condon absorption, 577  
 Franck-Condon principle, 5  
 Free energy  
   amphiphilic aggregates and, 190  
 Free energy function  
   amphiphilic aggregates and, 189  
 Fresnel reflection coefficients, 552  
 Fructose-1,6-phosphate  
   chemical oscillation and, 360  
**G**  
 Gap junction  
   electron crystallography and, 265-66  
 Gaseous reactions  
   thermokinetic interactions in, 77-102  
 Gases  
   see Inert gases, Rare gases  
 Gene product 32  
   electron crystallography and, 264  
 Generalized Langevin equation, 580-81  
 Germanium  
   conductivity of  
     stress and, 151-52  
   insulator properties of, 140  
   localization theory and, 143-44  
   orbital energies for, 411  
 Gibbs free energy  
   amphiphilic aggregates and, 190  
 Globular micelles  
   molecular organization in, 180-82  
 Globular proteins  
   aqueous solutions of  
     hydrophobic effects in, 447  
     hydrophobic interactions and, 435  
   structure of  
     computer simulation of, 328  
 Glucagon  
   structure of  
     nuclear magnetic resonance and, 133  
 Glycerine  
   2,3-epoxy-1-propanol conversion to, 350  
 Glycolysis  
   periodic perturbations and, 348  
 Gold  
   electron affinities of, 411  
 Gram-negative bacteria  
   electron crystallography and, 266  
 Growth factors  
   aggregation-dependent triggering processes and, 399  
**H**  
*Halobacterium halobium*, 264  
 Halobenzene cations  
   electronic degeneracy in, 289  
   molecular symmetry in, 515  
 2-Haloethanol  
   rotational isomerization of, 498-500  
 Halogens  
   cage effect for, 575  
   diatomic  
     structural properties of, 335  
 Hartree-Fock equations, 416

- Hartree-Fock-Slater method, 424  
 Hartree-Fock theory, 306  
 Heat transfer coefficients  
   continuous stirred-tank reactor  
     and, 91-92  
 Heemskirk system  
   limit cycle oscillations in, 371  
 Helium  
   ground state of  
     Lamb shift in, 23  
 Helmholtz free energy  
   amphiphilic aggregates and,  
     190  
 Hemagglutinin  
   electron crystallography and,  
     266  
 Hemoglobin  
   electron crystallography and,  
     265, 268  
   proton fluctuation anisotropy  
     and, 175  
 Herzberg-Teller expansion, 569  
 Hexafluoride  
   stable existence of, 413  
 Hexafluorobenzene cation  
   electronic degeneracy in, 289  
 Higgins model  
   chemical oscillation and, 354  
 Hopf bifurcation, 350, 362  
 Hydration  
   radial distribution function  
     and, 437  
   see also Hydrophobic hydra-  
     tion  
 Hydrides  
   relativistic calculations for,  
     422-23  
 Hydrocarbon droplet assumption,  
   200  
 Hydrocarbons  
   carbon formation from, 34-41  
   conformational equilibria in,  
     340-41  
   nonisothermal gas-phase  
     oxidation of, 102  
   solubility in liquid water, 434  
   see also Aromatic hydrocar-  
     bons  
 Hydrochloric acid  
   deuterated  
     spectroscopy of, 12  
 Hydrocyanic acid  
   deuterated  
     spectroscopy of, 12  
 Hydrogen  
   atomic  
     Lamb shift in, 22  
     carbon formation from acety-  
       lene and, 38  
     carbon formation from  
       methane and, 35-36  
   heavy  
     discovery of, 11  
   metallic phase of, 139  
   molecular  
     continuous spectrum of, 5  
     detection in outer planets,  
       16  
     emission spectra of, 3, 29  
     ionization potential of, 26  
     presence in atmospheres,  
       24  
     quadrupole spectrum of, 20  
 Hydrogen-bonded liquids  
   structural properties of, 336-  
     41  
 Hydrophobic effects, 433-48  
   aqueous inert gas solutions  
     and, 446-47  
   biophysical chemistry and,  
     447  
   intermediate circumstances  
     and, 447-48  
 Hydrophobic hydration, 435  
   nonpolar solutes and, 436-43  
   polar molecular liquids and,  
     341  
 Hydrophobic interaction, 435  
   nonpolar solutes and, 443-46  
 Hypernetted chain approximation  
   polar molecular liquids and,  
     330
- I
- Ignition phenomenon  
   thermokinetic interactions and,  
     80-84  
 Immune system  
   aggregation-dependent trigger-  
     ing processes and, 399  
 Immunoglobulin molecules  
   fluorescence photobleaching  
     recovery and, 399  
   pattern photobleaching and,  
     394  
 Inclusion bodies  
   electron crystallography and,  
     268  
 Inert gases  
   hydration in liquid water, 442  
   solubility in liquid water, 434  
 Inert gas solutions  
   aqueous  
     hydrophobic effects in, 446-  
       47  
 Inertial motion model  
   circular dichroism and, 221  
 Influenza virus  
   electron crystallography and,  
     266  
 Infrared induced photochemistry,  
   491-522  
   bimolecular reactions and,  
     506-21  
   unimolecular rotational  
     isomerizations and, 493-  
       506  
 Infrared laser spectroscopy  
   methyl radical and, 68  
   transient species and, 55-  
     59  
 Infrared spectroscopy  
   molecular dynamics and, 53-  
     71  
   molecular ions and, 60-63  
   photochemical reactions and,  
     63-71  
 Insulators  
   electron spin resonance and,  
     155  
   see also Metal-insulator transi-  
     tion  
 Integral equations  
   polar molecular liquids and,  
     329-33  
 Interaction site model  
   computer simulation and, 325-  
     26  
   polar molecular liquids and,  
     232  
 Internal conversion, 3  
 Interstellar medium  
   diatomic spectra in, 24  
 Intracellular transport  
   fluorescence photobleaching  
     recovery and, 400  
 Iodine  
   cage effect for, 575  
   photodissociation in solution,  
     575-78  
 2-Iodoethanol  
   rotational isomerization of,  
     500  
 Ioffe-Regel criterion, 146  
 Ionic salts  
   molecular dynamics simu-  
     lations of, 541-42  
 Ionic systems  
   computer simulation of,  
     537  
 Ions  
   molecular  
     emission spectra of, 3, 29  
     infrared spectroscopy of,  
       60-63  
     vibration-rotation transitions  
       of, 60  
   radical  
     pure rotational transitions  
       of, 60  
 Iron tetracarbonyl  
   vibrationally stimulated reac-  
     tions of, 492  
 Isomerization reactions, 583-86  
   charge transfers and, 586-90  
   infrared induced photochemis-  
     try and, 493-506



## J

- Jahn-Teller effect, 224, 288, 293
- Jahn-Teller Hamiltonian, 308
- Jahn-Teller systems
  - linear
    - bound states of, 310-14

## K

- Ketene
  - photolysis of, 18
  - XeCl 308 nm photolysis of, 69
- Kramer-König relation, 149
- Kramers-Heisenberg dispersion equation, 568
- Kramers rate theory, 578-80
- Kubic harmonics, 542

## L

- Lamb shift
  - in atomic hydrogen, 22
  - in helium ground state, 23
- Lanczos algorithm, 304
- Langer modification, 308
- Langevin equation, 580-81
- Lanthanide contraction, 409-10
- Lanthanides
  - relativistic effects in, 412
- Larmor radius, 61
- Laser-induced fluorescence
  - electronic degeneracy and, 289
- Laser magnetic resonance, 54
  - CH<sub>2</sub> spectra and, 69
  - infrared spectroscopy of ions and, 60
  - paramagnetic species and, 70
- Laser photolysis
  - collisional energy transfer and, 70
  - of formaldehyde, 70
  - of HBr, 69
  - of pyruvic acid, 69-70
  - of UF<sub>6</sub>, 69
- Laser spectroscopy
  - formaldehyde fluorescence and, 11
  - see also Diode laser spectroscopy
- Lead
  - orbital energies for, 411
- Lecithin
  - chain packing in, 179
- Lennard-Jones fluid
  - supercooling of, 536
- Lennard-Jones interaction, 437
- Lennard-Jones potential, 445, 535
- Leukemia cells

- total internal reflection and, 394
- Liapounov stability theorems, 84
- Ligands
  - binding to biopolymers, 159
  - dissociation from biopolymers
    - electric fields and, 165-66
- Lipid bilayers
  - electron crystallography and, 266
  - lateral diffusion of membrane proteins and, 398
  - molecular organization in, 180
- Lipid micelles
  - nuclear magnetic resonance and, 133
- Lipid monolayers
  - pattern photobleaching and, 394
- Liquid crystals
  - aliphatic end chains in
    - conformation of, 478-82
  - molecular dynamics simulations of, 543-44
  - molecular structure and ordering in, 476-78
  - thermotropic
    - nuclear relaxation in, 483-86
- Liquid density assumption, 188
- Liquids
  - hydrogen-bonded
    - structural properties of, 336-41
  - molecular
    - quenching of, 526-27
    - scaled particle theory of, 192
    - structural properties of, 185-86
    - see also Polar molecular liquids
- Lithium sulphate
  - molecular dynamics simulations of, 542-43
- Localization theory
  - conductivity and, 143-50
- Localized molecular orbital approach
  - circular dichroism and, 221-22, 234

## M

- Magnetic fields
  - conductivity and, 144, 147, 152-53
  - ion production in a hollow cathode and, 62
  - pure rotational transitions of ions and, 61
- Marcus theory, 589
- Mass-velocity effect, 409

- Maximal entropy
  - amphiphilic aggregates and, 189-91, 202
- Maxwell's equations, 551, 565
- Membrane proteins
  - lateral mobility of, 398-99
  - rate of diffusion of, 398
- Membranes
  - aqueous solutions of
    - hydrophobic effects in, 447
    - hydrophobic interactions and, 435
- Mercury
  - inert pair effect in, 411
- Metal-ammonia systems
  - metal-insulator transitions in, 140, 142
- Metal-insulator transition, 139-57
  - conductivity and, 142-47
  - critical exponent and, 154-56
  - magnetic field tuning and, 152-53
  - nature of, 141-42
  - stress tuning and, 151-52
- Metals
  - alkali
    - upper energy band of, 140
- Metal-semiconductor systems
  - metal-insulator transitions in, 140
- Metal trimers
  - electronic degeneracy in, 288
- Methane
  - bond dissociation energy of, 35
  - carbon formation from, 35-37
  - solid
    - computer simulation of, 538
    - soot formation and, 46-47
- Methane clathrate hydrate
  - hydration structure of, 440
- Methanol
  - solvation and, 341-42
  - structural properties of, 336-39
- Methemoglobin
  - protolytic equilibrium of
    - electric fields and, 176
- N-Methylacetamide
  - solvation structure of, 342
  - structural properties of, 336-37
- Methylacetylene
  - C-C single bond in, 16, 26
- Methyl cyanide molecules
  - structural properties of, 335-36
- Methylcyclohexane
  - 1,1-difluorocyclohexane inversion in, 588

- 3-Methylcyclohexanone  
vibrational circular dichroism  
of, 227, 234
- Methyl halides  
ultraviolet spectra of, 4
- Methyl radical  
infrared laser spectroscopy  
and, 68
- Methyl vinyl ether  
rotational isomerization of,  
505
- Micellar aggregates  
amphiphile chain packing in,  
182-86  
molecular dynamics sim-  
ulations of, 200-1  
qualitative models of, 206-8
- Micelles  
aqueous solutions of  
hydrophobic effects in,  
447  
caging effects in, 575  
globular  
molecular organization in,  
180-82  
hydrophobic interactions and,  
435  
lipid  
nuclear magnetic resonance  
and, 133
- Microdensitometry  
electron crystallography and,  
249-50
- Microwave spectroscopy  
molecular ions and, 62
- Mineral systems  
computer simulations of, 537
- Mobility gap, 141
- Molecular Aharonov-Bohm  
effect, 284
- Molecular dynamics  
infrared spectroscopy and, 53-  
71  
nonadiabatic, 277-316
- Molecular dynamics simulations  
amphiphilic aggregates and,  
200-1  
atomic systems and, 535-37  
cage effect for iodine and,  
575  
hydrophobic hydration and,  
439  
isomerization reactions and,  
583  
molecular systems and, 537-  
45  
polar molecular liquids and,  
326-28  
solids and, 530-34
- Molecular spectroscopy, 1-30
- Molecular states  
nonadiabatic  
quantum theory of, 279-87
- structure and dynamics of,  
287-304
- Molecular systems  
computer simulation of, 537-  
45
- Molecular transitions  
nonadiabatic, 279
- Monoterpenes  
vibrational circular dichroism  
of, 227
- Monte Carlo simulations  
amphiphilic aggregates and,  
200-2  
*n*-butane-water interactions  
and, 446  
hydrophobic hydration and,  
439  
hydrophobic interactions and,  
444-45  
polar molecular liquids and,  
326-28  
solids and, 528-29
- Mott criterion, 142
- Multichannel quantum defect  
theory, 302
- Multiphoton ionization spectroscopy  
Rydberg state resonances and,  
290  
vibronic coupling and, 290-  
91
- Multiple isomorphous replace-  
ment  
electron crystallography and,  
255
- Multiple quantum cross polariza-  
tion, 452
- Multiple quantum experiments,  
463-70  
ensemble averaging and, 463-  
64  
projections and, 464-69  
time reversal and, 469-70
- Multiple quantum filtering, 452
- Multiple quantum nuclear mag-  
netic resonance, 451-86  
liquid crystals and, 476-86  
ordered alkanes and, 472-76  
polymorphic liquid crystals  
and, 478-82  
thermotropic liquid crystals  
and, 483-86
- Multiple quantum orders, 459-63  
coherence transfer echo filter-  
ing and, 462-63  
off-resonant irradiation and,  
459  
phase Fourier transform and,  
460-61  
time proportional phase in-  
crementation and, 461-62
- Multiple quantum spectroscopy,  
109, 455-70
- applications of, 471-86
- Muscle  
electron crystallography and,  
267  
myosin fluorescence in, 395
- Myosin  
electron crystallography and,  
267  
polarized fluorescence of, 395
- Myosin fragments  
translational diffusion coeffi-  
cient of  
actin and, 401-2
- N
- Naphthalene  
behavior in durene crystals,  
544  
carbon formation from, 41  
molecular dynamics sim-  
ulations of, 540
- Neodymium  
nonbonding *4f* electrons of,  
413
- Neon-water interaction  
minimum energy configuration  
of, 436
- Neptunium  
oxidation states of, 412
- Neuromuscular junction  
fluorescence photobleaching  
recovery and, 399
- Nitrites  
molecular dynamics sim-  
ulations of, 541-42
- Nitrobenzene  
adsorption on nickel  
Raman spectroscopy and,  
559-62
- 2-Nitroethanol  
rotational isomerization of,  
500
- Nitrogen  
molecular  
dissociation energy of, 8  
predissociation in, 8  
rotational Raman spectrum of,  
4  
solid  
computer simulation of,  
537-38  
tail bands of, 2-3
- Nitrous acid  
rotational isomerization of,  
493-98
- Nonadiabatic interactions, 300
- Nonadiabaticity  
electronic degeneracy and,  
280-81  
slow-electron systems and,  
298-304  
two-state systems and, 281-84

- Nonadiabatic phenomena  
   classical/semiclassical  
     approaches to, 304-16  
 Nonadiabatic processes  
   in collisions, 308-9  
 Nonadiabatic scattering, 314  
 Nonpolar solutes  
   hydrophobic hydration and,  
     436-43  
   hydrophobic interactions and,  
     443-46  
 Nuclear magnetic resonance,  
   105-34  
   methodology of, 105-110  
   multiple quantum, 451-86  
   nucleic acids and, 121-34  
   proteins and, 110-21  
   two-dimensional, 452-55  
 Nuclear Overhauser Effect Spec-  
   troscopy (NOESY), 107-31  
 Nucleic acids  
   conformation of  
     electric fields and, 170-74  
   electron crystallography and,  
     265  
   helix-coil dynamics in, 129-  
     31  
   nuclear magnetic resonance  
     and, 121-34  
   orientation of  
     electric fields and, 163-65  
 Nucleosides  
   protons in  
     indirect coupling in, 109  
  
**O**  
  
 Oligonucleotide A(pA)<sub>5</sub>  
   absorbance of  
     electric fields and, 165-66  
 Oligopeptide Lys<sub>5</sub>  
   absorbance of  
     electric fields and, 165-66  
 Optical rotation, 213-14  
 Oregonator model  
   Belousov-Zhabotinsky reaction  
     and, 354  
 Ornstein-Zernike equation  
   polar molecular liquids and,  
     330  
 Oscillatory reaction  
   nonadiabatic continuous  
     stirred-tank reactor and,  
       100-1  
 Oscillatory states  
   thermokinetic interactions and,  
     84-86  
 Osmotic second virial coeffi-  
   cient, 445  
 Oxygen  
   DTBP decomposition and, 97-  
     98  
  
 liquid  
   ultraviolet triplet bands in,  
     9-10  
 molecular  
   dissociation energy of, 5, 9  
   forbidden transitions in, 23-  
     24  
   Schumann-Runge bands of,  
     24  
 solid  
   computer simulation of, 538  
  
**P**  
  
 Pancreatic trypsin inhibitor  
   nuclear magnetic resonance  
     and, 112  
 Paraffins  
   intramolecular structure of  
     periodic variations in, 528  
   molecular dynamics simu-  
     lations of, 541  
 Pattern photobleaching, 392-94  
   immunoglobulin molecules  
     and, 394  
 Pauli spinors, 415  
 Peptides  
   solvation and, 341-42  
 Percus-Yevick approximation  
   polar molecular liquids and,  
     330  
 Periodic table  
   relativistic effects and, 408-14  
 Phase contrast theory  
   electron crystallography and,  
     253-54  
 Phase diagrams  
   chemical oscillation and, 351  
 Phase Fourier transformation  
   multiple quantum orders and,  
     460-61  
 Phase response curves  
   Belousov-Zhabotinsky reaction  
     and, 359-60  
   chemical oscillation and, 357  
 Phosphofructokinase  
   chemical oscillation and, 360-  
     61  
 Phospholipids  
   chain packing in, 179  
 Phosphoric acid  
   structural properties of, 333  
 Phosphorus  
   predissociation of, 7  
 Photobleaching  
   pattern, 392-94  
   immunoglobulin molecules  
     and, 394  
   spot, 391-92  
   see also Absorbance  
     photobleaching recovery,  
     Fluorescence  
     photobleaching recovery  
     Photochemical reactions  
     infrared spectroscopy of, 63-  
       71  
   Photodissociation  
     of iodine in solution, 575-  
       78  
   Photodissociation cage effect,  
     575  
   Photoelastic modulators  
     circular dichroism and, 214  
   Photoelectron spectroscopy  
     electronic degeneracy and,  
       289  
   Photolysis  
     infrared spectroscopy and, 64  
     see also Flash photolysis,  
       Laser photolysis  
   Photosynthetic cycle  
     oscillatory transients in, 348  
   Photosynthetic light-harvesting  
     complex  
       electron crystallography and,  
       266  
   Photosynthetic reaction center  
     electron crystallography and,  
       266  
 Planetary atmospheres  
   diatomic spectra in, 24  
 Plutonium  
   oxidation states of, 412  
 Polar molecular liquids, 321-43  
   computer simulation and, 326-  
     29  
   integral equations and, 329-  
     33  
   intermolecular potentials in,  
     323-26  
   solvation structure in, 341-  
     43  
   structural properties of, 333-  
     43  
 Polyacetylenes  
   soot formation and, 46-47  
 Polyatomic ions  
   molecular dynamics simu-  
     lations of, 541-42  
 Polyatomic molecules  
   electronic degeneracy in, 288  
   electronic transitions in, 10-11  
   infrared spectra of, 25-26  
   nonadiabatic states of, 279-87  
   spin-orbit coupling in, 429-30  
   ultraviolet spectra of, 7  
 Polyelectrolytes  
   dissociation electric-field  
     effect and, 162  
 Poly-L-glutamic acid  
   helix-coil transition of  
     electric fields and, 176  
 Poly-L-lysine  
   diffusion in low-salt solutions,  
     401

- helix-coil transition of  
   electric fields and, 176  
 Polymerization  
   photobleaching and, 387-89  
 Polynucleotides  
   single-stranded  
     helix-coil transition of, 170-71  
 Polyoma virus  
   electron crystallography and, 268  
 Polypeptide hormones  
   aggregation-dependent triggering processes and, 399  
 Polypeptides  
   conformation changes of  
     electric fields and, 175-76  
   electric birefringence of, 175-76  
   electric field-induced effects of, 160  
   orientation of  
     electric fields and, 174-75  
 Polyphenyls  
   intramolecular structure of  
     periodic variations in, 528  
 Porins  
   electron crystallography and, 266  
 Pratt-Chandler theory  
   hydrophobic hydration and, 438-39  
 Premixed flames  
   soot formation in, 41-50  
 Projection theorem  
   electron crystallography and, 254-55  
 Promethium  
   oxidation states of, 412  
 Propane  
   carbon formation from, 40  
 1-Propanol  
   rotational isomerization of, 499  
 2,3-epoxy-1-Propanol  
   conversion to glycerine, 350  
 Propylene  
   carbon formation from, 40  
 Propylene oxide  
   vibrational circular dichroism of, 231-33, 237  
 Proteins  
   conformation of  
     electric fields and, 175-76  
   electric field-induced effects of, 160  
   electron crystallography and, 265-68  
   nuclear magnetic resonance and, 110-21  
   orientation of  
     electric fields and, 174-75  
   see also specific type  
  
 Proton fluctuation anisotropy  
   hemoglobin and, 175  
 Purple membrane  
   electron crystallography and, 258  
 Pyridine  
   adsorbed on silver  
     Raman scattering and, 570  
 Pyruvic acid  
   laser photolysis of, 69-70  
  
**Q**  
  
 Quadratic coupling, 284-85  
 Quantum numbers  
   half-integer, 282-83  
 Quantum theory  
   nonadiabatic molecular states and, 279-87  
 Quasielastic light scattering  
   diffusion coefficients and, 401  
 Quasiperiodicity  
   in Belousov-Zhabotinsky oscillator, 367  
 Quenching  
   of molecular liquids, 526-27  
  
**R**  
  
 Radial distribution function  
   hydration and, 437  
 Radiationless decay, 224, 277  
 Autoionization and, 302-3  
 conical intersections and, 309-10  
   multimode vibronic interactions and, 286-87  
 Radon  
   spin-orbit effect in, 412  
 Raman effect  
   discovery of, 5  
 Raman scattering  
   by adsorbed molecules, 550-62  
   surface-enhanced, 563-70  
 Raman spectra  
   of nitrogen, 4  
 Raman spectroscopy  
   see Surface Raman spectroscopy  
 Rare gas systems  
   metal-insulator transitions in, 140  
 Recombination reactions  
   radical, 574-78  
 Recursive-residue method, 304  
 Reference interaction site method  
   polar molecular liquids and, 329-32  
 Relativistic calculations  
   for molecules, 422-30  
  
 Relativistic effective core potential, 415-22  
 Relativistic effects, 407-30  
   periodic table and, 408-14  
   quantitative calculations and, 414-22  
 Relayed coherence transfer  
   nuclear magnetic resonance and, 109  
 Resonance  
   chemical oscillation and, 349-50  
   multiple quantum orders and, 459  
 Retinal disk membrane  
   rhodopsin diffusion in, 398  
 Rhodopsin  
   absorbance photobleaching recovery and, 380  
   diffusion in retinal disk membrane, 398  
   rotational diffusion of, 395  
 Ribosomes  
   electron crystallography and, 268  
 Rod outer segments  
   absorbance photobleaching recovery and, 380  
 RRMK theory, 585-86  
 Rubidium  
   atomic dipole polarizabilities for, 420  
 Rydberg electrons  
   core vibrations and, 301  
 Rydberg radicals, 25  
 Rydberg spectra  
   of benzene, 302  
 Rydberg states  
   of benzene, 303  
   resonant mixing in, 298-302  
   vibronic structure of, 290  
  
**S**  
  
 Samarium  
   oxidation states of, 412  
 Sarcoplasmic reticulum  
   electron crystallography and, 266  
 Scaled particle theory  
   hydrophobic hydration and, 438  
 Schrödinger equation  
   electron spin and, 407-8  
   time-independent spin-free, 280  
 Schrödinger Hamiltonian, 424  
 Schumann-Runge bands, 5  
   of molecular oxygen, 24  
 Selkov model  
   chemical oscillation and, 354

- Semiconductors  
 doped  
   compensation and, 154  
   conductivity in, 142-47  
   metal-insulator transitions in, 140-42
- Sickle cell deoxyhemoglobin  
 hydrophobic effects in, 434
- Sickle cell hemoglobin  
 electron crystallography and, 268
- Sickle hemoglobin fibers  
 hydrophobic interactions and, 435
- Silicon  
 conductivity of  
   stress and, 151-52  
   insulator properties of, 140
- Silver  
 electron affinities of, 411
- Site-site Ornstein-Zernike equation  
 polar molecular liquids and, 329-31
- Smoluchowski formula, 575
- Sodium-ammonium system  
 metal-insulator transitions in, 142
- Sodium-dodecyl-sulfate  
 chain packing in, 179
- Sodium nitrite  
 intermediate states of matter of, 527-28
- Sodium phosphotungstate  
 specimen preparation and, 248
- Solids  
   computer simulations of, 525-45
- Solutes  
   see specific type
- Solutions  
   atom transfer reactions in, 580-83  
   charge transfers in, 586-90  
   chemical reaction dynamics in, 573-93  
   enthalpy of, 434  
   entropy of, 434  
   isomerization reactions in, 583-90  
   Kramers rate theory and, 578-80  
   photodissociation of iodine in, 575-78  
   recombination reactions in, 574-78  
   tunneling reactions in, 590-92  
   see also Aqueous solutions
- Solvation  
   polar molecular liquids and, 341-43
- Soot formation  
   chain formation stage in, 34  
   chemistry of, 31-33  
   above flat flame burner, 33  
   particle inception in, 33-34  
   surface growth stage in, 34  
   flow tubes and, 34-41  
   premixed flames and, 41-50
- Soot particles, 31-51  
   transmission electron micrograph of, 32
- Space  
   deuterium fractionation in, 63
- Specimens  
   preparation for electron crystallography, 248-49, 268-69
- Spectroscopy  
   see specific type
- Spin Echo Correlated Spectroscopy (SECSY), 107-110
- Spin-orbit coupling  
   chemical bonding and, 425-30
- Spin-orbit effect, 409, 412
- Spin-orbit operator, 418-19
- Spin systems  
   density operator of, 453-54
- Spiroonadiene  
   vibrational circular dichroism of, 227
- Spot photobleaching, 391-92
- Statistical mechanics  
   computer simulations in, 525-26
- Steroid molecules  
   vibrational circular dichroism of, 233
- Stokes' law, 575, 579
- Stress  
   semiconductor conductivity and, 151-52
- Striated muscle  
   electron crystallography and, 267
- Stroboscopic method  
   chemical oscillation and, 353
- Sulphur hexafluoride  
   molecular dynamics simulations of, 540-41
- Surface-enhanced Raman scattering, 563-71  
   chemical enhancement and, 567-70  
   electromagnetic enhancement and, 565-67
- Surface Raman spectroscopy, 549-71  
   angle-resolved measurements and, 554-57  
   applications of, 559-62  
   selection rules and, 557-59  
   surface electromagnetic fields and, 551-54
- Surfactant  
   water-hydrocarbon liquid solution interface and, 448
- Surfactant aggregates  
   Monte Carlo simulations of, 201-2
- Surfactant bilayers  
   molecular organization in, 180
- Surfactant molecules  
   chain packing in, 179
- Sym-triazine  
   nonadiabatic bound states in, 291-98  
    $3s^1E'$  Rydberg state of, 284
- Synchrotrons  
   circular dichroism and, 216
- T
- Thallium  
   inert pair effect in, 412  
   orbital energies for, 410
- Thermal feedback  
   chemical autocatalysis and, 101
- Thermokinetic interactions, 77-102  
   conservation equations and, 78-80  
   nonadiabatic conditions and, 80-84  
   oscillatory states in, 84-86  
   singularities in, 84-86
- Thiourea  
   intermediate states of matter of, 527-28
- Thomas-Fermi screening  
   wavevector, 148
- Time proportional phase incrementation  
   multiple quantum orders and, 461-62
- Tin  
   orbital energies for, 411
- Toluene  
   radiationless decay in, 303
- Total internal reflection, 394
- Transitions  
   see Forbidden transitions
- Transition state theory, 573-74, 587-89  
   Kramers rate theory and, 578-80
- Trifluorobenzene cation  
    $j = 3/2$  splittings in, 284
- Trigonal molecules  
   vibronic interactions in, 286
- Tropomyosin  
   electron crystallography and, 267
- Tubulin  
   electron crystallography and, 268

- Tunable laser spectroscopy  
infrared spectroscopy of ions  
and, 60
- Tungsten  
4f shell of, 413
- Tunneling reactions, 590-92
- U
- Unimolecular rotational  
isomerizations  
infrared induced photochemis-  
try and, 493-506
- Uranium  
4f shell of, 413  
oxidation states of, 412
- Uranocene  
5f orbitals of, 413
- Uranyl acetate  
specimen preparation and, 248
- Uranyl compounds  
electronic spectra of, 413
- Uranyl ion  
existence as stable aqueous  
species, 412  
f-orbital bonding of, 413
- Urea  
solvation and, 341-42
- Urinary bladder membrane pro-  
tein
- electron crystallography and,  
266
- V
- Valence theory, 4
- Valency  
dissociation electric-field  
effect and, 162
- Van Hove function  
coherent inelastic neutron  
scattering and, 529
- Vibrational circular dichroism,  
213-39  
applications of, 226-39  
instrumentation in, 214-16  
sensitivity of, 215  
theory of, 216-26
- Vibronic coupling, 280  
in benzene, 292-93  
in Rydberg states, 290-91
- Vibronic interactions  
radiationless electronic decay  
and, 286-87
- Vibronic states  
electronic degeneracy and,  
288-90
- Vinylacetylene  
soot formation and, 46-47
- Virus particles  
hydrophobic interactions and,  
435
- Viruses  
assembly of  
fluorescence photobleaching  
recovery and, 399-400
- W
- Water  
hydrogen-bonding patterns in,  
340  
liquid  
hydrogen bonding structure  
of, 438  
hydrophobic interactions in,  
435, 443-46  
inert gas hydration in, 442  
solubility in, 434  
pair-pair potentials in, 324  
structural properties of, 333,  
336-40
- Water-hydrocarbon liquid solu-  
tion interface  
amphiphilic surfactant and,  
448
- Wigner-Eckart theorem, 416

